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ARTICLE I.—*Remarks on Cholera, as it appeared in Lexington in June, 1833.* By JOHN E. COOKE, M. D.

NOTWITHSTANDING so much has appeared in the pages of this journal on the subject of cholera, the writer is persuaded that many of its readers will not think it amiss that a few more are occupied with a statement of the circumstances in which this disease appeared in Lexington in June, and the result of the treatment adopted. So much interest has, indeed, been expressed in many letters received from all the surrounding states, by medical men of this city, and in the public papers, and so many inquiries made, that it appears incumbent upon some of the profession here, to give an account of the circumstances in which the cholera arose, and the way in which it was treated. And inasmuch as scores of these letters have been from alumni of Transylvania, asking for advice and information *as such*, it seems in a particular manner obligatory on the public teachers in the university, notwithstanding the pressure of the times, to give the information desired.*

*This paper was intended for publication in the last journal.

There is another reason which influences the writer to undertake the task, not however in the slightest degree desiring to exclude others, but rather desiring that the most ample exposition may be made of the facts observed. The reason alluded to is, that he has advanced views in relation to the disease in question, as a public teacher, which it is incumbent upon him to show to be supported by the occurrences of June, or to give them up. It is his purpose, therefore, to state the circumstances in which the cholera arose in Lexington, last month, and, without reservation, the mode of treatment which he found to be successful. And however this paper may be received by such as differ from him in the use of the remedies, one thing must be allowed: that, considered merely as a record of facts, in a disease so fatal, it ought to meet with a friendly reception; as nothing but a sense of duty, (he believes, and perhaps those who read it may think so too,) has induced him to make known the extent to which he has carried the use of a remedy, against which the most violent prejudices still exist. In truth, one object he has in view is to show those who have heretofore confined themselves to small doses of the remedy in question,—on which they allow the safety of the patient chiefly depends, in all diseases in which bilious discharges from the bowels afford the greatest relief,—*that they may safely have gone much farther than they did, in the use of it, in their efforts to save their patients who have died, while the remedy allowed to be their principal dependance and chief hope, was withheld, avowedly through fear of using it to greater extent than they had been accustomed to.*

In order to have a full view of the circumstances in which the disease appeared, the exact situation of the ground should be taken into view.

A small stream of water arises near the eastern border of the city, at some little distance from it, and as it enters, it turns and takes a course nearly westerly, traverses its whole extent, and passes out at the western border.

The ground bordering on this stream is low and flat, so that in considerable rains the cellars often have water in them.

Main Street runs east and west along the northern edge of this flat.

Water Street runs parallel with Main, and the stream runs through it lengthwise, inclosed, in the body of the town, by two high walls.

High Street runs parallel with Water Street, upon a ridge, not very high but steep, which accompanies the stream abovementioned through its whole extent within the city. This street runs so near the descent, that a number of the houses are a story higher in the rear than in the front.

There is therefore a strip of ground throughout the whole extent of the city, from High Street across Water Street to Main, very low and flat, and subject to inundation in wet weather.

This flat moreover, at the upper, or eastern end of Main Street, is still wider, extending to the next parallel street, and reaching almost to Limestone Street, (which crosses Main Street at right angles, about the middle of the eastern half of that street,) so as to be in the rear of a number of houses on the north side of Main Street.

The ground extending northwardly from the border of this flat, gradually rises to the northern limit of the city. It is traversed, north and south, by a ridge, not elevated however, along which passes Limestone Street, just mentioned.

The first range of squares west of Limestone Street occupies ground somewhat lower than the second range, west; so that the water of both these ranges of squares passes along the lower ground of the first range, to the stream which traverses the city east and west. Some of the cellars in this range sometimes have water in them. One of the streets crossing it has a conduit under it, to allow the passage of water in wet weather, of which at such times a great quantity takes that course. Other streets crossing it are quite miry in wet weather. At the northern extremity of this flat, it extends over Limestone Street.

The ground in the north-western part of the city is flat.

The southern side of the city, from High Street, above-mentioned, southwardly, is generally flat—although it is called “the Hill” from the circumstance of having to ascend the ridge abovementioned, to reach it.

The reader, then, is requested to bear in mind the following circumstances:—1. The general flatness of the site of the town—2. The flat ground extending throughout the town from east to west, and from the ridge, south of the stream, northwardly to Main Street, and across it at its eastern end—and 3. The comparatively low situation of the range of squares immediately adjoining Limestone Street, on the west side.

It is evident from this account that Lexington ought not to expect to escape suffering from the epidemics of hot weather, whenever there is moisture enough to co-operate with the heat in producing them. Why then has she in general suffered so little? and, Why has she suffered so severely on the present occasion? The answer is not difficult, if we look at the facts of her case.

She escapes in common because the descent, though gentle, is sufficient to carry off the water which falls in most summers, so speedily that it is rare to see water running in her streets the second day after a rain—because the whole soil within her bounds is so valuable, that almost every foot of it is cultivated—because in general a great deal of care is taken to keep the streets, alleys, and gutters clean—and because the stream which passes through, is inclosed, in the body of the town, by a high wall on both sides, and the greater part of it is covered over by public markets, or arched streets. As long as this state continues, severe summer epidemics of any form, are out of the question; and as this is her general condition, her general health is remarkable.

But why, then, has she so severely suffered this summer? The causes are as plain in this as in the former case. The town has been this summer inundated by the rains of May,

and kept soaking wet throughout the unusually hot weather of that month, and until late in June. This extraordinary heat and moisture co-operating, could not possibly do otherwise than produce an epidemic in the form of *some* disease of hot weather; and the form which it assumed here in June was cholera, for the most part, but not unmixed with cases of bilious fever, and some of dysentery.

But the connexion of the disease with the hot and moist state of a surface abounding with vegetation, is not only evident from this general view—but the particulars in a remarkable manner confirm it.

An unoccupied part of the flat above mentioned, on the east of Limestone Street, and north of Main Street, had been made the receptacle for several years of offal of every kind; being a convenient place, near at hand, and out of sight, in the rear of the buildings on Limestone and Main Streets. In this spot an old house had attracted the attention of so many, on account of its filthiness, that it was deliberately burnt during the prevalence of the disease, at mid-day. But the house was not so great an evil as the accumulated mass of filth near it. The extreme moisture of May kept this whole mass in a proper state for the hot sun, to produce its full effect, in such circumstances, epidemic disease. I have been informed by a gentleman who passed it every day repeatedly in going from his house to his office and back again, that there were a number of pools of water in this spot, in hollow places made by the irregular manner in which the offal had been thrown down. The whole place was about an acre of ground. Add to this that the flat ground on both sides of the stream, was partially under water. Passing along an alley up to "the Hill," I looked into the enclosed lots, and saw the water standing among the weeds which, in so favorable a season for them, had overgrown all profitable vegetation. Some of the cellars on Water Street had water in them, and many of the back grounds of the houses on the south side of Main Street, in the lower part of the town, abounded in vegetation in a fit state to produce disease.

The first cases of the disease appeared in the houses on the north side of Main Street, immediately in the rear of which, was the mass of filth above mentioned. It occupied about an acre, and the half of the square next to Limestone Street rises abruptly above it. On that side of the square only one died. On the northern and eastern sides there are no houses; and on the corresponding sides of the adjoining squares there are only one or two, which are not inhabited. On the south side of the square on which this nuisance existed, (which was not, however, the only one at that end of the town,) and on the squares immediately adjoining it on the north-east, east, south-east, and south—66 persons died—and the population is far from being dense except on Main Street. On the whole flat extending through the city, from High Street to Main Street, and including the flat just above mentioned, which is a part of it, there were 224 deaths—about one half the whole number.* Among these are included only 9 on the south side of High Street.

In the range of squares immediately west of Limestone Street, mentioned above as occupying flat and rather low ground, and which was in so wet a state that a constant stream passed along down till late in June—there were 57 deaths, not counting 30 more on Main Street, and between it and the water—these being included in the 224 above-mentioned. At the head also of this low ground, where it extends eastwardly across Limestone Street, as above described, there were 10 deaths, and three more on the adjoining rising ground which encircles this and the lot at the head of this range of squares on which 20 died. On this flat ground

* The whole number reported by the committee appointed by the Common Council is 489 as dead of cholera from June 1st to August 1st. From this number, in considering the cause of the disease in town, those who died in the country ought to be deducted. I would therefore take off the number who died at the Asylum, because it is so entirely detached and distant from town as to have nothing to do with the disease in town. This number is 33. There are 10 others also marked as dead in town, who, though within the incorporated limits, are nearly all as entirely detached from it as if they lived five miles off. The bounds are laid off so as to extend a mile on every road from the Court House—which makes an irregular circle of two miles in diameter, embracing land enough for several comfortable farms around. Deducting 33 and 10 from 489, we have 446 as the whole number of deaths by cholera in two months.

along Limestone Street then, there were in fact 100 deaths.

In the two—the flat extending along the stream and that extending northward from it, along Limestone Street,—there were 294 deaths—within about 4 of two thirds of the whole number lost.

The flat along Limestone Street crosses Main Street immediately adjoining the square on which was the nuisance spoken of above, and 64 persons died in that part of Main Street alone, which passes along these two squares and the one adjoining the nuisance: 7 more died on Main Street in the same neighbourhood, in the scattered houses above, making 71 in all. This is about one third of its whole length—and 56 only died in the other two thirds.

I have a map before me with the number of deaths marked on every front of every square, a score for each death, and the clusters of marks along these flat places is such as to make it very manifest that there is something in these places to cause greater mortality than elsewhere.

The contrast between the number of deaths on the two ranges of squares abovementioned, the first and second west of Limestone Street, places this matter in a very clear light. The range next to Limestone Street is the hollow way through which the water falling around, passes to the stream in the lower part of the town. It is a rich soil, moist, and abounding in vegetation always. The streets crossing the northern part of it are miry in wet weather, and one of them has a conduit under it for the passage of the water. The range of squares next west, is on the declivity of the ground rising from this flat. This range, with the exception of one or two places in which the flat ground extends across the intervening street, is always dry, and was so in the past season.

The comparison is made between the squares north of Short Street, because the second range west of Limestone, may be considered as terminating at that street—the next square south being the public square. The square in the first range between Short and Main Streets, excluded from the

comparison, is that on which the greatest number of deaths took place.

The number of deaths, then, in the first range of squares west of Limestone Street and north of Short Street, was 51. The number in the second range west of Limestone, was 7; including 2 at a considerable distance from the edge of the town. Two of these, moreover, died at a spot where the flat extends across the street from the first into the second range of squares, and nearly opposite to a block of three houses in which five people died.

In the square at the northern extremity of the first range there were 20 deaths, the whole being occupied by one family and their factory-slaves. The overseer and 19 slaves died. The corresponding square in the second range is not built upon. The two corresponding squares, next south, have but few inhabitants, and only one death occurred, which was on the first range. Three squares are left in each range, which, on comparison, very plainly show the same general truth.

In the three squares of the first range there were 30 deaths—in the corresponding three of the second, there were 5: two of which, as before stated, occurred in a low place. The population of the three squares of the first and second ranges is not materially different.

It has been asserted, however, that the disease prevailed in every part of the city pretty much alike; and that some of the most high and airy situations have been remarkable for the number of deaths. But, if we were ignorant of the circumstances in which these deaths occurred, the presumption would be that a similar cause produced them, to that which caused the mortality in places in which the circumstances were known; and they are only to be counted as objections to the truth deduced from observation of those circumstances, when it is shown that such did not exist where they occurred. Meanwhile, the very fact that *some* high and airy situations have been *remarkable* for the number of deaths, proves, that *the disease did not affect every part alike*;

but that there was something in those places in which they differed from others. Let us inquire into this matter.

There are six spots on the map of the town abovementioned, not comprised within the limits of the two flats before spoken of—viz. that running throughout the town east and west along the water course—and that running north and south from the water up along Limestone Street on the west side.

One of these is on Main Cross Street, high up, about fourth street. There is a factory on the spot, and the site is flat and necessarily wet in such weather as we had in May. Around these factories there is a great deal of vegetable matter, consisting of the offal parts of the hemp there manufactured into rope and bagging. I have found it difficult sometimes to pick a clean path into the house, through the wet mass of matter lying around. At this factory seven persons died—and three others adjoining it—in all 10 in this cluster.

A number of deaths occurred also at another factory, and adjoining it, east of Limestone Street, at the upper or north end; 10 in all. The lot on which this factory is built is the low place before mentioned as an extension of the flat ground of the first range of squares west of Limestone Street—across that street. It is wet in rainy weather and was so this season. In winter there is a pond on it.

A third spot remarkable for the number of deaths in a high and airy situation, is in the same northern quarter of the city a little south of a line between the first two mentioned—on Mill Street between second and third. In one house 9 died. It is a spacious, airy dwelling, detached from others by its own grounds and neighbouring open lots. But the site is very flat, and the whole of the waste-water from a pump in the yard, and from the roofs, is spent upon the spot. There is a thick growth of trees in the yard, making a most delightful place in dry weather, but in the wet season we have had, I am informed on good authority, the ground was damp if not wet, and the vegetation abounding—The back buildings are immediately adjoining this

growth—and the black people who inhabited them, were the principal sufferers. Seven died, and only two white persons; one a very aged infirm lady, and the other an infirm looking man. The master and mistress and five children escaped entirely.

Another place remarkable for the number of deaths in one house, is on the same street at the corner between it and Short Street, which is, it may be remarked, the next street to Main. Ten died in this house—It is a house of public entertainment, and was kept open the whole time of the prevalence of cholera. I have been informed by a gentleman on whom I can rely that the mistress had remarked that the number of deaths in her house is to be attributed to the circumstance that they received travellers and others, which most of the taverns refused to do at that time—some who died there were travellers, and only four or five of the family died, and one was a child.

Another house, on "the Hill," spacious and airy, lost seven of its inmates. Of these, however, four were persons who removed from Main Street, not far from where the first cases occurred, after the disease had appeared. The ground around is moreover flat, and therefore in such a season wet.

The last place to be mentioned is on the next square south of the preceding. Ten persons died in a small compass, in old houses, surrounded by much filth, and, the site being very flat, the ground was very wet. Three of those who died here also, were from Water or Main Street.

In the first three of these spots, therefore, (in which 29 persons died in a few houses,) the same circumstances were present, which existed in those divisions of the city in which the greatest mortality occurred. In the two last mentioned cases the circumstances were very similar, while the mortality attributable to the spot is much diminished by the fact that 7 out of 17 were from Main and Water Streets. As to the only case left of the six, the fourth abovementioned, the occurrence of a number of deaths, in a public house kept freely open when many others were shut, cannot be consider-

ed as an objection to a truth deduced from observation of many facts all around.

Five of these six cases, therefore, instead of objections, prove to be on inquiry, a support to the general truth, that *cholera arises in the same circumstances in which autumnal fevers arise*; and the sixth affords no objection to it.

Adding the number of deaths in these six spots, viz. 56, to the number who died along down Main Street and up Limestone Street, viz. 279, we have 335, leaving only 111 for all the rest of the town. It would not be at all difficult, moreover, to show that *this number* occurred more or less in clusters according to the prevalence of *the same circumstances* in greater or less degree. Thus 17 of them occurred on Short Street west of Main Cross, which street, it will be recollected, runs parallel with main Street, and is but a square north of it. Whereas on Second Street, the next street north, (and west of the same line, Main Cross Street,) only five died. Many, too, soon after the commencement of the disease removed from that part of the town where it began, to higher parts, carrying with them more or less of the morbid influence produced by the cause to which they had been some time exposed. Seven cases mentioned a little above, were of this kind—and no doubt there were many others, these having only while writing come to my knowledge in an accidental conversation with the gentleman who attended several of them. Such, indeed, was the alarm in that part of the town, that after the first week, the principal tavern which is situated in it, was closed to travellers, and the boarders left it.

Some pains have been taken to make the above statement, because it is very important to *ascertain the circumstances in which the disease arises*. There are no doubt some inaccuracies, but not such as to affect in the least the general conclusion. I have been greatly assisted in marking upon the map of the town, abovementioned, the places of the deaths of the different persons, by Messrs. James E. Davis and C. M. Randall, who were constantly and usefully engaged during the

cholera in attending on the sick, and administering medicines to them with great success.

If it is still objected to this view of the subject, that autumnal epidemics are diseases of hot weather, and cholera appears in the coldest—it is replied, that cholera generally appears in hot weather, rarely in cold: and the same is true of autumnal diseases. Every practitioner of experience must have met with instances of the prevalence of fevers in winter not to be distinguished from those which he treated in the fall. The ground work for both was laid in hot weather, and it will be a very difficult task to point out a *place* in which cholera has prevailed, which has not often been harassed with autumnal fevers.*

If it be asked, why did the cholera continue but two or three weeks?—it is replied—that the question assumes what is not true. On the 22nd of June, full three weeks after its commencement, the whole number of deaths was made out with great care, by persons who took great interest in it, and was found to be 381, as published in the newspaper of the above mentioned date. Between the first of June and the first of August, according to the report of a committee of the Common Council, there were 489 deaths by cholera. Thus, there were 108 deaths between the 22nd June and the first of August. Nor has the disease yet entirely ceased. Cases still occur, of which the writer has had experience in his own person within a week, and, he is informed, there has been one death this week. But the cases are not so violent, for several reasons. The situation of things is not so favourable to the production of epidemic diseases, as it was. The excessive moisture of May and the fore part of June has passed off, and the weather has been much as usual for many weeks. The cause of the disease is, therefore less active. Cholera moreover usually moderates in violence as the sea-

* See *Tran. Journal of Med. &c.* vol. i, p. 537 for a paper by the writer in which the occasional prevalence of bilious or autumnal fevers *in winter*, is shown from many witnesses: See particularly pp. 542, 3, 4, and middle of 547 from Sydenham, and top of 548 from Cleghorn.

son advances, giving place, as it were, to fever and dysentery, cases of which have occasionally occurred throughout the season. Those who are affected with diarrhœa, moreover, are more on their guard, and the mode of treating it is better ascertained. From this view of the facts of the case, and of the manner in which cholera usually takes its course, it appears that it does not, this season, differ materially from what has been observed in other seasons, *as to continuance*.

If it be asked, Why does the epidemic assume this particular form, if it be dependant upon the same circumstances which produce our summer and autumnal fevers?—the answer is, we cannot tell why these diseases assume this or that particular form in different persons—why, for instance, in one year there are more cases of cholera occurring in company with the cases of fever, intermittent or remittent, or of dysentery—in another why there are more of dysentery; or in another, few of any but plain fever. But we are not less satisfied of *the fact* that all these diseases are dependant upon the same circumstances—because we see them uniformly appearing in those circumstances—and because we see them appear in company, early if the heat and moisture of the season are favourable to their production; late if the reverse is the case; and not appearing if these circumstances of weather do not combine to produce them.*

If it be asserted, that the very general prevalence of the disease shows it to be the effect of a general or epidemic state of the atmosphere,—the reply is, that *this general prevalence* is not inconsistent with the doctrine, that the disease arises in the same circumstances which produce bilious diseases in general; for these diseases also, are frequently observed to prevail as generally as cholera has lately done—while the dependance of the latter as well as the former, *upon certain circumstances existing in each location*, is manifest not only from *the fact*, that some places suffer most severely while others not far

* See Tran. Jour. of Med. &c. vol. i, p. 194, for a table of the weather and diseases of six summers in Minorca, (in a paper on Cholera by the writer,) formed from materials taken from Cleghorn's Dis. of Minorca.

off escape, but that even in the same small city some parts suffer remarkably while others escape almost entirely—which last has been most clearly exemplified in Lexington during the present summer, as has been already shown at length.

It is true, there is some peculiarity in the condition of the sick which leads them to have intermittent or remittent fever, rather than dysentery; or cholera rather than either—and that peculiar condition must have a cause. But there is no less difficulty in explaining why *a few persons* have cholera in the midst of their neighbours, or even their own family who are suffering under fever or dysentery, than why *many* should suffer in the same circumstances. Let the objector explain the cause of the peculiarity in the one case, and he will explain it in the other. But, whatever that explanation may be, it never can do away *the fact, that cholera arises in the very same circumstances in which fever and dysentery arise.*

It is very frequently said, however, that this is a new disease, and that it began in 1817 in India, and has peculiar symptoms. But for this there is no foundation whatever. Dr. Johnson in the preface to the *second* edition of his work on Tropical Climates, says, "*A very large impression of this work having been distributed and the demand still increasing, the author has for a considerable time past, employed his leisure hours in preparing a new edition,*" &c. This preface is dated in 1818, and therefore the first edition was written a considerable time before that year. In this work, speaking of the cholera in India where he practised, how long before he wrote this book the writer has no means at hand of ascertaining—he describes the disease with all the symptoms of the cholera which is said to have originated in 1817—"Nausea and retching,"—"frequent purging—of mucus and slime"—"incessant watery purging and painful tenesmus"—"the stomach rejecting every thing that was offered"—"*spasms in different parts of the body*"—shrunken features, pulse scarce to be felt, breathing oppressed and laborious, extremities cold, shrivelled, and covered with clammy sweats—and death in *seven* hours from the attack. He adds, "This may serve as

a specimen of *the worst form* of that dreadful disease, which has obtained the appellation of '*Mort de Chien,*' or the '*Death of a Dog.*'" And again, "From such an awful state of concentration, *the disease assumes all degrees of violence, down to a common cholera.*"*

Dr. Johnson, moreover, gives a number of extracts, in the pages immediately following the above, from Mr. Curtis, who practised in India *thirty five years before his time*, as appears from what he says of him in the commencement of the *treatment* of hepatic derangements, p. 293, same volume. In these extracts we find the same symptoms plainly stated.

"Early in the morning of the 21st of June," says Mr. Curtis, "we had two men seized with the *Mort de Chien*, both of which we lost in a few hours; and in the course of the two following days, three more in the same complaint, without meeting with one fortunate case. To the 25th, when we sailed for Negapatam, we had three new cases of the same kind, all of whom were saved, but two of them with great difficulty."—"In all of them the disease began with a *watery purging,*" &c.—"This purging soon brought on great weakness, coldness of the extremities, and a remarkable paleness, sinking, and *lividness of the whole countenance.* Some at this period had nausea, and retching to vomit, but brought up nothing bilious. In a short time, *the spasms began to affect the muscles of the thighs, abdomen, and thorax; and lastly, they passed to those of the arms, hands, and fingers.*"—"In this progression, the patient remained *from three to five or six hours, from the accession of the spasms, seldom longer.*"†

These extracts prove in the clearest manner, that the very same disease we have lately had among us, did not originate in 1817, but was a disease of India, and the Indian islands thirty five years before Dr. Johnson practised there—that is about 1780, or earlier. It is moreover to be remarked that there is not an intimation in the account of it given by Dr. Johnson or Mr. Curtis, that it was *then* a new disease. And

* Johnson on Trop. Climates, vol. i, pp. 366, 7. Phil. Edit. 1821.

† Ibid. pp. 368, 9.

the very name it then bore among Europeans, *Mort de Chien*, shows that it was current in India while the French, and before the English were predominant there.

Sydenham also in his account of the cholera of 1669 in London, gives a similar account of the symptoms. He says, "This disease, as we before said, was more epidemic in the year 1669, than I ever remember to have known it in any other. It comes almost as constantly at the close of *summer*, and towards the beginning of *autumn*, as swallows in the beginning of *spring*, and cuckows towards *midsummer*."—"The *cholera morbus* is easily known by the following signs: (1.) immoderate vomiting, and a discharge of vitiated humours by stool, with great difficulty and pain; (2.) violent distension of the *abdomen*, and intestines; (3.) heartburn, thirst, quick pulse, heat and anxiety, and frequently a small and irregular pulse; (4.) great *nausea*, and sometimes *colliquative sweats*; (5.) *contraction of the limbs*; (6.) fainting; (7.) coldness of the extremities, and other like symptoms, which greatly terrify the attendants, and often destroy the patient in twenty four hours."*

Speaking again of the cholera of 1676, he says, "At the close of summer the *cholera morbus* raged epidemically, and being rendered more severe by the extraordinary heat of the season, was accompanied with more violent and inveterate convulsions, than I had hitherto observed. For not only the abdomen, (which is usual in this case) but all the muscles of the body, and especially those of the arms and legs, were affected with terrible spasms, so that the patient would sometimes leap out of bed, and writhe himself all manner of ways, in order, if possible, to mitigate their violence."†

After this conclusive testimony to the antiquity of the disease, it is scarcely necessary to add that Cullen in his *Synopsis Nosologiæ Methodicæ*, mentions spasms as a symptom of cholera. His definition runs thus: "*Humoris biliosi vomitus, ejusdem simul dejectio frequens; anxietas; tormina; surarum*

* Swan's Translation of Sydenham's Works, Sect. IV, Chap. II.

† Dr. Sydenham's Answer to Dr. Brady, &c. same work: paragraph 7.

spasmata." "A vomiting of a bilious humour, at the same time a frequent discharge of the same downwards; anxiety; painful movements in the bowels; *spasms of the calves of the legs.*"*

If the question be proposed, Why then, if this be a correct view of the matter, (that cholera arises in the same circumstances with fevers and dysentery,) was this summer epidemic so very fatal?—the answer is a plain one.

The circumstances in which it arose were in a remarkable degree adapted to the production of disease of a high grade, *whatever form it might take.* If it had assumed the form of dysentery it must have been very fatal, as in 1816 in the upper part of Virginia. The same result must have followed, as in 1804, 1816, 1819, 1821, 1822 in the same country,—if it had appeared in the form of a remittent, or even an intermittent, as in 1823 in the same. In one of the years above mentioned, in a town of 1800 or 2000 people, 70 died in a short time of remittent fever. In another which suffered as severely there were four dead persons in one house at the same time. So in Lexington, in circumstances so favourable to the production of disease, it must necessarily be severe whatever form it assume. If it had been afflicted with a remittent fever of the same violence with that above mentioned, the number of deaths must have been, in proportion to the population, above 200. But having assumed the form of cholera, well known to be the most dangerous of all the forms of summer disease, on account of the violence of the onset, the great prostration from excessive vomiting, from inense discharges, and from the terror excited in the minds of those who are attacked—no wonder ought to be felt that the number of deaths was doubled.

It will not be deemed amiss by the readers of this journal, many of whom are alumni of Transylvania University, that some notice should be taken here of a disposition to attach discredit to the professors of this school on account of the number of deaths in Lexington from cholera this summer.

* Culleni Synop. Nosol. Method. Genus LX.
VOL. 6.—No. 3.

Were this the more idle or careless talk of the multitude, it should be disregarded; but this is not the case. The editor of the Western Journal of Medical and Physical Sciences has expressed himself on the subject in a manner so plain and so objectionable as to require notice. He uses the following language, after speaking of Dr. Dudley's circular letter, and of his temperate use of calomel.

"It would appear, however, that some of our friends in Lexington have given this drug *in quantities which are as unprecedented, as the mortality which they sought to avert.* We have understood, on pretty good authority, that some patients swallowed not less than a quarter of a pound in two or three days! This reminds us of a letter from a Louisiana correspondent, who, in speaking of the practice in yellow fever, says, *'I drew blood enough to float the General Jackson steambot, and gave calomel enough to freight her.'*"

"From being the seat of a distinguished medical school, Lexington is a name of much authority among the physicians of this great valley. Not a county and scarcely a town in all the states south of the Ohio and east of the Mississippi, is without a graduate of the Transylvania school. To all such, the conclusions of its professors and their brethren, are likely to be of paramount influence, in regard to this new, mysterious, and baffling epidemic. As public journalists, then, whose readers chiefly reside in states which remain to be visited, *we have felt it a duty, to refer to the practice of our Lexington friends, and by placing it in connexion with the desolations of the disease in that city, to warn the profession against too implicit a reliance on the speculations and experience of those, whom, for many just and substantial reasons, they are accustomed to respect.*"†

There is in this extract a manifest attempt to connect the mortality in Lexington with the large use of calomel; and also to attach blame to the professors of the medical college on account of that mortality.

* *These italics* are by the editor of the Western Med. and Phys. Journal

† Western Med. and Phys. Jour. vol. vii, p. 90.

With regard to the first, to show how unjust it is to place the large use of calomel in connexion with the desolations of the disease in Lexington, the following plain facts are all-sufficient.

There is no physician in Lexington *charged* with the excessive use of calomel but the writer, and he did not arrive at home from the eastward until the 9th of June. One of the physicians who had a most extensive practice, issued a handbill advising certain remedies which contained *no calomel*. Other principal physicians recommended other remedies, and few, as far as the writer is informed advised larger doses than twenty grains of calomel, *at that time*. Mark now, the mortality of the disease at that period.

In an extra of *The Observer and Reporter*, dated June 5, 6 o'clock P. M. 60 cases are reported as all which had then occurred, except "some half a dozen blacks at Higgin's factory not very dangerous." Of these 60 cases, 9 are stated to have been "not dangerous" or "slight;" and such a remark, at such a time, shows that the persons were not ill. Of the 51 cases left, 23 were reported as *then dead*, and 5 more of the cases then reported, terminated in death, according to official accounts since published—leaving 18 recoveries out of 51.

On the other hand, out of full 50 cases under the sole management of the writer, in the six days between his arrival at home and his confinement to bed from a fall, (including four or five he prescribed for during his confinement,) three only died during his attendance upon them. After this, Professor Short, then just recovering from an attack, at the earnest request of the writer, took charge of the cases on hand, and treated them in accordance with his views, there being an entire agreement between them as to the mode of treatment then necessary, in all the cases except one; which continued under the direction of the writer. This case and two others terminated in death, one of them after having passed into the care of a third physician; *but all three from 6 to 15 days after the disappearance of the symptoms of cholera,*

from want of attention to directions, and from indisposition in one family to give medicine, not then for the first time evinced. The patient last alluded to, was, moreover, about 80 years of age, and the radial arteries were manifestly ossified. Of these patients, those who recovered, took, almost without an exception, very large doses of calomel.

On the one hand, where there is no reason to believe large doses of calomel were used, there were 18 recoveries out of 51 cases. On the other, where very large doses were used, the recoveries were 44 out of the same number. Without pretending to attribute the mortality in the former case to the want of calomel, the writer must be allowed to say, that the contrast completely shows that *there is no propriety or justice in placing the large use of calomel "in connexion with the desolations of the disease in this city."*

In the extract given above, there is, moreover, an attempt to attach blame to the professors of the medical school in Lexington on account of the mortality. But where is the propriety or justice of placing *their* practice particularly "in connexion with the desolations of the disease?" Of the six, one lives seven miles from town and has nothing to do with the practice of the city. Another was in Boston, and did not reach Lexington until after the cholera had nearly ceased. Two more were absent and did not arrive in town until the disease had prevailed a week. Of these one was laid up on the sixth day after arriving at home, and has been confined to the house ever since; and the other was attacked on the 2nd day after his return, and was scarcely able to take charge of the patients of the former, when he fell and was long unable to move. A fifth was laid up with cholera in the second week, and one only of the whole six was able to continue to practice throughout. Let the reader take into consideration, moreover, that there are in the city, (besides steam-doctors,) fifteen other physicians, with some of whom some of the professors had not any acquaintance, and some of whom, moreover, dealt in secret remedies; and that a number of medical students also were very busy—and then

judge of the propriety of placing *the practice of the medical professors in particular* "in connexion with the desolations of the disease in this city," and warning the profession against their speculations and *experience?*

This extract, moreover, assumes that the mortality in Lexington was "*unprecedented.*" This however is contradicted by many statements in the public papers, according to which the mortality has been much greater in proportion to the population in several towns in the west. In Lexington it has been estimated that there were from 1000 to 1500 sick in the second week of the prevalence of the cholera. Some opinion may be formed of the correctness of this estimate from the fact that the writer had at that time above 70 cases in charge, (of whom above 20 had been under the care of others previously,) and he was one of above twenty in practice. He came in, moreover, in the midst of the disease when almost every family had engaged a physician. The proportion of deaths to recoveries was therefore, not by any means so great as has been represented and too hastily believed. And when we look at some particulars, the same is equally clear. There have been a dozen cases in the writer's own house—several of them severe cases—and no death. In one house of free coloured people he had six cases and no death among them—In another house four cases of white people and no death. In another of black and white, seven cases and only one death, and that so violent a case as to deter the sufferer from any serious effort to recover. It is stated that in some of the factories the loss has not been more than one tenth of the number sick—And one of the writer's colleagues mentioned to him just before penning these lines, that he had lost but two of the cases of which he had had the sole management.

It is plain from the statements which have been now made, that the editor of the *Western Med. and Phys. Journal* was hasty in his conclusions respecting the great mortality from the use of large doses of calomel—hasty "in placing the practice of his Lexington friends in connexion with the

desolations of the disease in that city," of course as the cause of them—and premature in "warning the profession against too implicit a reliance on their speculations and *experience*."

The truth of the matter seems to be, that he suffered himself to be misled into a firm persuasion that the want of success in Lexington was unprecedented; and, from previous opposition to the use of very large doses of calomel, that this mortality must be attributable to such use of that medicine. But what does he rest his opinions upon? Upon letters written to him by one who could not have been a professional man. Relying upon these, with no knowledge of the practice of his Lexington friends but what he could gather from popular report, (excepting only a short letter of one of them) he has *deemed it his duty* to denounce their practice, to place it in connexion with the mortality (of course as the cause of it,) and to warn the profession against it—Surely he has been hasty—Surely he should have known the particulars before he decided. He should have waited until his Lexington friends had gathered breath to state the facts of the case—at least he might have written for information which assuredly would not have been withheld. He should not have placed any reliance on any accounts whatever of men not in the profession, because they cannot take the whole view of the ground. He should not *even with full information, undisputed*, of the want of success of *one* out of *many*, have ventured to condemn *the whole*—nor to have placed *any one mode*, respecting which he was destitute of *authentic* statements, in connexion *with the desolations in the mass*.

With regard to the treatment of the disease, as there was no other difference in the circumstances in which it appeared, than that they were uncommonly favourable to the production of an epidemic of high grade,—so, in the mode of treatment, there was nothing different from that which is always proper in cholera, except that the greater severity of the disease required correspondent attention and energy in the practitioner. The views of the writer as to the proper mode of treating cholera, have been fully stated in several numbers

of this journal. That which was published in the 5th volume, p. 468, in relation to the disease as it appeared in Lexington last fall, he has seen no cause to depart from in a single particular. It is founded upon the following considerations, and the continued success which results from it, confirms him in the correctness of the principles on which it is founded.

Like all forms of disease of hot weather, cholera is to be cured by producing and keeping up a free secretion from the liver and its discharge from the bowels.

The best remedy with which to effect this object is calomel, in every form of such disease.

In cholera it is particularly important, because from its small bulk, weight, and freedom from taste, it is more easily taken and retained than any other medicine—because other cathartics almost universally tend more or less to produce liquid passages, and they are already profusely so—and because from the rapid course of the disease, the best remedy ought to be relied upon, as far as is safe.

In using calomel to produce secretion from the liver in cholera, as the disease is so violent and rapid in its progress, the full quantity the physician judges the patient will require to effect it, ought to be given at once. If the patient is probably to die within 24 hours, perhaps in 12, as calomel is slow in its action, there is often no opportunity to remedy the defect of too small a dose. If I give ten or twenty grains, and finding it fail, repeat the dose, and discover at length that a number of such doses are necessary; and that, besides keeping the patient lingering in a most dangerous disease, some are lost before the object is effected—I am led to conclude that I should have given my doses at shorter intervals; and finding great benefit from this on trial, it is but an easy step to the conclusion, that several such doses given at once, would have more effect than the whole number given at intervals. To this conclusion the writer has been brought many years since; and the good effects observed are the following.

If you succeed, (as you generally will, if you keep a steady eye on the course of the disease around you, and the effects of the dose you give in the first cases,) your patients are in a safe state in a few hours: 2. You have given less calomel than would have been required if you had begun timidly, and repeated the dose every four or two hours; and therefore have less apprehension of salivation, particularly as by the speedy return of the secretion of the liver, your patient can take aloetics instead of calomel, (the best substitute for it known to the writer,) and purge freely, and prevent the action of the mercury on the system.

As to the exact dose required to effect this object, it must necessarily be determined by the experience of the practitioner, in each particular season in which he has cholera to treat. For many years the writer had found 60 grs. a sufficient dose. Last fall this failed, and after several trials, he rose to 120 grs. and succeeded. That quantity was during the rest of the season given in almost every case he had under his charge. It uniformly effected the object of establishing the secretion of the liver—but did not in every case produce a discharge from the bowels of the secreted fluid, without some aid. That the secretion had been established in these cases, was concluded from the total cessation of the watery passages for many hours, and from sensations in the bowels commonly experienced from the presence of such matter in them. And in no such case did aloes, sometimes assisted with a little oil, after a number of doses, fail to show the justice of the conclusion, by the discharges which followed its use—Even injections sometimes answered the purpose, or a small dose of oil, or the infusion of sena. The only fatal cases which he saw in that season, were two to which he was called after the attendance of others, when the patients were cold, livid, and nearly pulseless. The dose was needlessly administered; and as might have been expected, without the desired effect. To this day the writer has seen no such case recover under any treatment—although he is informed of the recovery of some few in

these circumstances in Lexington this season. But, although after considerable experience in the course of a given epidemic, the physician may be able generally to succeed in the attempt to put an end to the watery discharges by a single dose of calomel, he will be very apt to fail in an epidemic of high grade, in the first cases; and sometimes afterwards. In this event, there is as great necessity for the repetition of the dose, as there was for the exhibition of the first. The patient must die if not soon relieved. The practice of the writer has been in the past season, as follows.

Such dose as was deemed likely to produce bilious discharges, was given as soon as possible.

In every case, if the calomel was rejected, or a large portion of it, rendering the result uncertain, the full dose was immediately repeated as often as rejected, until one remained. The second was very seldom rejected if given immediately.

The best way, it is believed, to administer calomel, is in a teaspoonful of brandy, with a little sugar and water. It is very easily taken also in clabber, either mixed with it, or between two thin layers of it.

If this dose was a sufficient one, *fully adequate to the emergency*, the first effect observed was an entire cessation of the watery discharges in a few hours—the second observed, was the production of bilious discharges in the usual time calomel takes to operate.

In this case the discharges were kept up by sufficient doses of aloes, (in tincture* or in pills, sometimes combined with rhubarb, sometimes with scammony) day by day until they ceased to be bilious, and became natural in all respects.

In some few cases, when the calomel had so far acted as to suspend entirely the watery discharges, after waiting 12 hours, even though there was no discharge of a bilious character, the aloes was administered.

If, notwithstanding the first dose of calomel, the discharges continued unaltered at the end of six hours, the full dose

* The tincture is made by infusing an ounce of aloes in a mixture of one gill of spirit and three of water.

was repeated; and the same at the end of every six hours afterwards, until there was an entire stop to them: after which bilious discharges appeared in the usual time, in about 12 hours and generally less. The case was thereafter treated with aloes &c. as before stated.

If the case was pressing and the discharges very great, the dose was repeated at shorter intervals, according to the urgency of the symptoms.

In some few cases, there was not an entire stop put to the discharges, so as to leave an interval of some hours between them and the bilious passages, as above stated—but there was a gradual change from a watery to a bilious discharge, manifested in its first approach by a corresponding change of colour. When this took place, as soon as the discharges became decidedly bilious in their colour, though they were still copious, the calomel was withheld; and they in every instance gradually became consistent—when it became necessary to administer aloes &c. as before mentioned.

The first object, in short, in every case, was to bring the patient to discharge bilious matter, by the use of calomel alone. The second was to keep up that discharge day by day as in bilious fever; and in every case in which these two objects were effected the patient recovered.

And hence arises the strongest confirmation of the doctrine, that the same circumstances produce cholera and bilious fever. For the internal condition of the patient in each is the same; the same medicine, calomel, producing the same effect, bilious discharges, and putting the patient in each, as soon as this is effected, so entirely into the same state that no one can decide, on seeing a patient discharging bilious matter, whether he had had cholera or not. This was effected in nine cases out of ten treated in the way above proposed, and the treatment afterwards, and the appearance of the patient, differed in no respect from that in bilious fever of a high grade. Moreover, some who had bilious fever for a week or more, fell into cholera and died in a few hours; the discharges suddenly changing from a black green bilious, to

a pure watery character, thus exhibiting in the same case at one time the form of cholera, and at another that of bilious fever.

Here then are found between bilious fever and cholera, all the points of resemblance upon which are founded the argument that intermittent and remittent fevers are but different forms of the same disease.* They arise in the same circumstances, in the same places, at the same time of the year, prevail together, and are cured by the same remedies, by the same kind of operation.

With regard to other remedies used by the writer, bleeding was found to be somewhat hazardous. With every disposition to use this remedy, where this can safely be done, in cases of great congestion, he was compelled to be very guarded during the prevalence of the cholera in this city, this summer. In three cases it was tried. Two of the patients were hearty young women; the third was an old man. They all had full and bounding pulse, and were warm and high coloured in the face. The old man bore the bleeding better than either of the others. The first young woman was so prostrated by the loss of only ten ounces, that I was greatly alarmed. She seemed to be sinking into collapse, and only recovered after a considerable time. The second was still heartier and more robust. The loss of the same quantity was borne better, but it caused a very evident change in the whole state of the patient in a few hours. She was pale—and the pulse much reduced. This patient and the old man were benefitted—and perhaps the other—but the risk was too great to venture without strong marks of ability to bear blood-letting, and I bled no more.

While the patient was warm, he was encouraged to eat at his pleasure, small bits of ice. They manifestly tend to quiet the stomach. Cold water causes vomiting—the patient cannot take enough to cool his thirst. Ice is a high gratification, and is in no way injurious.

* See note in Cullen's Nosology, at the commencement, under the head *Intermittents*.

Filling the stomach with any thing tends to produce vomiting and interferes with the operation of the medicine. Until, therefore, the first object is effected, the production of bilious discharges, the patient ought to take nothing. The struggle is for life, and it will soon be decided.

When the patient becomes cold, and his pulse fails, camphorated spirit of wine, a few drops every few minutes on a lump of sugar—brandy and water—and mint julep, were used—The first is perhaps best.

When profuse perspiration covers the face and body, the attendants should wipe it off gently, as fast as it appears, with warm flannel cloths of the size of a handkerchief, for the sake of the comfort of the patient, who is incumbered too much by larger ones. If the perspiration is not wiped off constantly, the evaporation tends rapidly to make him too cool, and hasten his death.

When he is cramped, he should be rubbed with a plenty of camphorated whiskey.

When he sinks, notwithstanding every effort fairly and faithfully made, into a cold, livid, and pulseless state, the experience of the writer is, that it is useless further to strive to save, and the whole object ought to be to render the patient as comfortable as possible—by strict attention to keep him dry with warm flannels—to keep his room quiet—and to give him every thing he asks for.

Throughout, his room ought to be kept quiet as possible.

The writer has never used opium with calomel, because he is persuaded that the quiet obtained in this way, is delusive, and that the patient and even the physician is often persuaded there is an improvement, when the morbid internal condition is not changed, and sooner or later shows itself in unexpected relapse and sudden death, or in lingering complaints which eventually terminate in the same way.

He has never used emetics, because he feared that if the dose should not prove decidedly emetic, the purgative effect which in that case emetic medicines exert, would injure the patient. With a remedy in his hands which he had scarce

ever, perhaps never known to fail, it would have been the height of imprudence to have resorted to an untried one. Resting, therefore, on past experience of the admirable effects of calomel in cholera, he administered that alone, and has had no reason to regret it in a single instance.

This essay might with propriety here terminate; but it is the intention of the writer to put the profession, and the public at large, in possession of the particulars of his practice—in return for which he is well aware that evil things enough will be said. But it is time that the public should cease to be abused with the idle stories told of one of the best medicines, if not the very best in the world. This is only to be done by a faithful record of the facts relating to its administration—and if, in return for the disclosure here made, with a view of placing them before the medical profession for the common good, the writer is to lose reputation—be it so: he thanks God he is prepared to make the sacrifice.

The first patient whom he visited in June last, had been ill some days, under the hands of several physicians who did not altogether agree, and had been taking twenty grain doses of calomel, without producing the effect desired by all, bilious evacuations. By advice of the writer 120 grs. were administered to him. On the next visit it was found not to have had the slightest observable effect.

That evening the then attending physician was taken ill, and the patient was left to the sole management of the writer. Ten hours after the first dose had been taken, finding it had failed entirely, the question must be decided, What next? Every one of the modes of treatment most advocated in the city had been tried in succession. To revert to them would not have been a rational act in one who did not approve of either, and had strong confidence in one which he had long tried, and found successful. He therefore proceeded, advising 240 grs. at 12 at night.

Next morning he waited till 10 o'clock, and finding no effect—not even the usual one of a sufficient dose of calomel

in cholera, a cessation of the watery discharges, the patient took from the hands of the writer an ounce of the same. In the course of the day he had a lead coloured, thicker, and opaque discharge, showing some influence of the medicine. At ten at night he took another ounce. Very early in the morning no further improvement had taken place—the passages as they were. Hoping something more from the last dose, waited till 10 o'clock, in vain; and then gave him the same quantity as before. At two the passages were thinner, and he had the appearance of those who die through want of proper evacuation in autumnal diseases; viz. some stupor, wandering of mind, and red face; and though the struggle was continued for some hours longer, he died. The failure in this case was attributed by the writer to too long a delay of the remedy—and to the want of bleeding, which he urged, but was overruled. The pulse was full, large, and strong, when bleeding was advised; and from the general effect of the remedy, and from its effect in subsequent cases in June, the writer feels persuaded that it would, in co-operation with the first ounce-dose of calomel, which exerted a manifest influence over the discharges, have produced the desired effect. He had no appearance of sore mouth.

Cases 2,3,4,5. The next cases the writer was desired to attend to, occurred in the family of Mr. Jones on High Street on the side next the stream. The houses on that side of the street are, some of them, a story higher in the rear than in front, being built on the declivity of the ridge, immediately above the stream of water above mentioned. Three daughters and a son were sick, 4 out of 7 of which the family consisted. They were of different ages, perhaps from 10 to 18—The two elder took 60 grs. of calomel each; the two younger 30. In six hours the discharges which had been watery, had changed to the green, viscid kind we commonly call bilious passages. The patients were left to the operation of the medicine: but lest the watery discharges should return on the cessation of the operation of the calomel, the same quantity was left for each, to be used in that event, in

the night. Next morning it appeared that the apprehended change had occurred in the eldest—that the second dose of calomel had been given, and that the father, alarmed at the great quantity of watery fluid discharged, had given also a grain of opium—but that the watery discharges still continued, with vomiting, and cramp. The patient had now been six hours in that state which had carried, even in the short run of her case, a score or two to the grave, and might fairly expect the same fate in six hours more. One hundred and twenty grains of calomel had proved to be scarcely sufficient to effect the object in view, during the preceding autumnal season. This dose had failed in the case of my patient over the way, the one first mentioned, and even double the quantity had not had the desired effect. I therefore determined at once to give her at least 240 grains. She vomited immediately afterwards, and threw up a large portion of it. To less than the full dose I was unwilling to trust her life, and immediately gave her a second half ounce. The result was the re-establishment of the bilious discharges in a few hours. The next in age also, had afterwards a return of the watery discharges, and took the same dose. The younger ones took 60 grain doses repeatedly on the appearance of a tendency to watery discharges. They all, after the full establishment of bilious discharges by the calomel, kept them up day by day with aloes in tincture, and all recovered. Two of them were somewhat salivated.*

Case 6. After breakfast next morning, A. Walker, a man of 40, perhaps, called at my house and complained of uneasiness in his bowels, but there was neither vomiting nor looseness. His complexion was very bilious. He was advised to take a powder which was given him, (60 grains of calomel) and to go immediately to bed.

At 4 o'clock in the afternoon I was called in haste to see him, and found him quite ill. He had wasted his time endeavouring to settle some business before he would lie by;

* The whole of the cases above stated occurred on the first afternoon after my return home.

and about 12 o'clock he was attacked by the disease, when he took the dose prescribed for quite a different state of things. He had been relying on it for four hours, and twelve was a very common period for the termination of an attack in death. He evidently required a larger dose, and from the experience of the night and morning, I could not think of giving him less than half an ounce, if I wished to succeed. At night, no effect; and the dose was repeated. *2nd day.* No change for the better. No bilious discharges: the disease advancing: vomiting frequent: the discharges profuse and watery: the cramps severe. He took another dose, an ounce, early in the morning. At 12 o'clock the watery discharges had stopped. In the course of some hours afterwards, some bilious discharges appeared; and great hope was entertained of his recovery, notwithstanding that he had been terribly harassed for twenty four hours by a disease which had in the course of that very time swept perhaps 50 into the grave; some of whom the writer had met in the streets, in apparent full health but just before, as it were—in the morning taken ill, in the evening buried. He took tincture of aloes, to promote the bilious discharges. *3rd day.* Symptoms unfavourable. The bilious evacuations had ceased; the watery discharges had returned: vomiting violent: cramp severe. Throughout the day the struggle was kept up to save him. He took more calomel, in similar doses; and also various stimulants, as camphorated spirit of wine on sugar, brandy and water, &c. Hope was again roused by a partial return of bilious discharges; but sunk again on their disappearance after some hours; and on the fourth day, he died. He was not salivated.

It was manifest in this case that the patient was sustained and enabled to maintain the struggle for a much longer time than common; many dying at the time, in twelve hours after profuse watery discharges had commenced.

It is likewise manifest that the cessation of the watery discharges on the second day, and the appearance of bilious ones some hours after, were effects of the medicine adminis-

tered—because such changes are not observed except under the influence of medicine—the course of the disease, *unresisted*, being a rapid uninterrupted down-hill course of more and more profuse discharges, until the patient is exhausted—and because these precise effects are those usually observed after the administration of a *sufficient dose* of calomel: by which is meant that there is a quantity suited to the condition of each case, which will produce these effects.

That quantity in thousands of cases, in common seasons, is 20 grains—in many 60 grains—and the latter had been found sufficient by the writer, perhaps in every case, before the autumnal season of 1832. Then it was found insufficient—but on increasing the dose to 120 grains, (to which he was led by the same mode of reasoning that led him and thousands of others in the South and West to 60 grs. when 20 were found insufficient) *the desired effect* always expected from calomel, was produced. By the same process of reasoning in the present summer, when 120 grs. failed, it was natural to conclude—(it would have been unreasonable to form any other conclusion—) *that it was not enough to effect the purpose*, particularly as in some cases in 1832 that dose was barely sufficient with the aid of aloes. It was necessary therefore to give up the medicine acknowledged almost universally to be indispensable in cholera, and fly to remedies inferior in efficacy, or try a larger dose *of the best*. The logic of the writer led him to the latter course as the only consistent one; and when he found, on getting up to the extraordinary dose abovementioned, *that the usual effect of calomel appeared*, it was like a light in the midst of darkness, convincing him that he was in the right path, and encouraging him to hope for a successful issue in his course.

Unfortunately, however, under the influence of apprehension of evil effects from the quantity of calomel administered, he did not repeat the dose which had produced such a salutary change; but trusted to aloes alone, when the bilious discharges had but just commenced and were not copious. This is a step which almost every physician in the country

would have condemned without hesitation, if the case had been stated without mention of the quantity. Perhaps every one, in consultation in such a case, upon being told that the patient had been taking calomel, that the discharges had under the operation of the last dose become bilious, and were not very free—would have said, Continue the calomel; and many would have added, You may help it with some proper cathartic—And every one must have seen cases in which the consequence of withholding calomel so soon in such cases, was followed by precisely the effects observed in the case now under consideration—viz. a cessation of the bilious discharges as the impression made by the calomel wore off, and the consequent return of the symptoms of the disease.

One inference, therefore, to be drawn from the occurrences of this case is, that the patient might have been saved if the dose found to have produced the effect desired, and admitted by almost every physician to be necessary to the cure of cholera, and, if continued or kept up, sufficient to secure it—had been repeated.

Another is, that the quantity found to be effectual in this advanced stage of the disease, would have been much more likely to succeed, if it had been administered in the commencement, before the system had been so greatly deranged by the violence of the vomiting and cramp, and by the exhaustion produced by the immense discharges. In other words, that a bolder exhibition of the remedy in the commencement, would have saved the patient—and this conclusion is fully supported by what afterwards occurred.

Case 7. On the same day, June 10th, I was requested to see a black woman, Maria, living with Mrs. Boggs. She had been sick two days; had taken, I was informed, calomel and opium. She was vomiting, had copious watery discharges, and severe and continual spasms. She was cold; her hands were shrivelled, and she had very little pulse. Gave her immediately myself, an ounce of calomel—and left her with so little expectation of seeing her again alive, that in count-

ing up that evening the probable number of dead then in town, she was reckoned among them.

The stomach was so irritable that a large part of the first dose of calomel was thrown up, and another immediately administered, as has been already stated to have been done in every case in which it occurred.

Next morning the patient was found alive, but under the necessity of taking another ounce.

About mid-day black passages, abundant but somewhat too fluid, made their appearance—to the great relief of the patient. They were allowed to pass off, and after they became smaller and more consistent, were promoted by tincture of aloes, given several times a day, according to circumstances. This was the only medicine she took afterwards. She recovered and is now well. She was smartly salivated.

Case 8. I was requested to visit Baron Steuben, a coloured man, on the same afternoon with the person whose case is last stated. He had been visited by one or two physicians; the last of whom was sick, and was not attending at the time. He was much in the same state with the preceding. Vomiting—discharging copiously a watery fluid—much cramped—rather stupid—the whole length of the fingers shrivelled. He took an ounce of calomel, and having vomited a considerable part of the dose, he took another immediately. On the next day he took calomel again in the same quantity, and on the day following aloes; the discharges having become black. Refusing, however, to take the aloes, in consequence of being not altogether in his senses, and even senna, the discharges became watery again and he took calomel several times before the black bilious passages were restored. The aloes and senna were afterwards used by Professor Short, and he recovered after a very severe struggle. He is now well. He was somewhat salivated.

Case 9. The daughter of Baron Steuben, about ten years of age, was attacked during the attendance on her father. She was very ill—purged excessively, was cramped severely—and much affected with stupor. Took half an ounce of

calomel, and repeated it several times in the course of three days I visited her. It had the effect of producing bilious discharges—but time was lost in efforts to make her take aloetics, to keep up the discharges. She therefore reverted to watery discharges—and it was found necessary to depend upon calomel alone—(and that in large doses, and they did not always operate before they were repeated,) or to let her die—as would inevitably have been the result, as she lay when not operated upon in a stupor, and was found sometimes out of bed on the floor, while her mother was attending to her father. Dr. Short was so fully persuaded that her life depended upon the use of calomel, that he gave her one or more, but not as large doses, in addition to what she had taken before he saw her. She was not at all salivated; and recovered perfectly, although she was so ill when he took charge of her that I had little expectation of her living.

Case 10. A black woman belonging to Mr. Laywell, had copious watery passages—but cramp had not appeared. She took half an ounce of calomel. Next morning no material change. She then took an ounce, which produced bilious discharges, and she recovered. Mr. L. was so struck with the effect, that he afterwards, although he had been opposed to the use of calomel, gave his wife who was attacked with cholera, the same quantity, and relieved her. The same was done by a number of others, from seeing the effect in their neighbours.

Case 11. Harry belonging to Mr. Smedes, had diarrhœa on Thursday June 6. Mr. S. gave him 30 grains of calomel, and next day 60—which produced green passages. After the impression of the calomel wore off, the bilious discharges ceased, and on the 9th his discharges were watery again. On the next day he was very ill and took 60 grains of calomel—after which Mr. S. gave him an emetic of ipecacuan. My first visit was after this, on the same day, about 12 o'clock. He was vomiting, purging profusely, and cramped severely. He took immediately an ounce of calomel, and towards night a second. Green bilious passages appeared in

a few hours, and being kept up by tincture of aloes &c. he entirely recovered. He was somewhat salivated.

By this time the number of persons put into a safe state in a very few hours by the administration of a full dose of calomel, was such that rarely indeed was less than an ounce administered. For although in some cases less might have answered the purpose; yet, inasmuch as it was impossible to determine with any certainty, which cases would require a repetition, and which would not; and as the fate of the patient was to be decided in so short a time, that there was frequently no opportunity to correct the error of an insufficient dose in the commencement—it was by far safer on the whole to give an extra dose to some, than to allow others to die from want of a sufficient one. There were indeed a few cases, where entire dependance could be placed in the sick and the attendants, in which, the symptoms too not pressing, 60 grains were administered, with directions upon an increase of the disease, immediately to give notice that a larger dose might be administered.

As, moreover, in several cases an ounce was found not to be sufficient to effect the purpose, and in consequence of the failure required to be repeated, about the third day a table-spoonful was given, and the effect was much better—in most of the cases effectually relieving the patient in a few hours.

Fourteen cases; 12 to 25. Among those who were brought by a single dose of calomel to passing bilious matter freely, were four cases at the house of Preston opposite the Bank; Mrs. Bowyer and Mrs. Rankin, Upper Street below Second Street; two cases at Dr. Caldwell's, he being absent; two of the servants of Mr. John Norton, and the husband of one of them; Judge, a coloured man in the kitchen of Mrs. Boggs; and Mrs. Probert, at the upper end of Upper Street. Of these, the first six took half an ounce each—the next two, an ounce—the remaining five took a table-spoonful, each.

Even a table-spoonful did not always effect the object. A black girl at Mr. Benjamin Keiser's took several such doses

before the watery discharges were stopped. Bilious passages then followed, and tinct. of aloes, about a wine glass at a time, kept them up and she recovered. But this was most remarkably exemplified in the following case.

Case 26. William Douglas, a young man, about nineteen, was visited for the first time on Wednesday evening. He had been ill all day, vomiting, purging, and violently cramped. He had rested satisfied with taking 20 grains of calomel early in the day. He was so ill that not a person present had any idea of his living till morning—the disease then being at what was called its height, and near 50 dying every day. He took a table-spoonful of calomel.

In the morning early found him living—but without any material change for the better, the discharges continuing entirely watery. He took another dose—and continuing to live, contrary to all expectation, and the discharges continuing the same, he took the same quantity every six hours on that day, and on the next, and on the third. On this day a slight change was observed in the colour of the passages, they having assumed a yellowish appearance, enough to excite a hope of the possibility of a further favourable change; and next morning they were decidedly green, but still thin, and he continued the same doses. On the following morning the discharges were found to have become thick, and green.

These four days, every one of which was expected to have been his last, the reader will easily perceive, were a time of great anxiety on his account. No patient had hitherto taken as much in his whole illness as he took every day. The question was continually recurring, Shall we proceed, or try something else? But the desired effect had not been produced, without which living was out of the question—the conviction was just as strong as ever, that there was nothing better than calomel—nothing as good—to produce it; and there was not the smallest mark of salivation. Moreover, the vomiting was much relieved; the cramp had ceased; and the discharges were not near as profuse, and there was a mixture of consistent matter in them, though not coloured

by the secretion of the liver, which kept alive the hope at every visit, that the next dose would succeed.

The desired effect, green bilious evacuations, took place on the morning of the second day following that on which the writer met with the accident above mentioned; viz. on the sixth day of his illness. The patient took from that time the tincture of aloes, with the usual effect, and improved so fast that his friends were in a day or two persuaded he would recover. Two errors were however committed in his case. First, When he was so weak that directions had been given that he should not even raise his head from the pillow by his own exertion, but have it supported, even to drink—a young friend thoughtlessly made him get up and walk, supported by him, across a large room to another bed. This produced a very bad effect, and caused a troublesome hick-up. This was done more than once. The second error related to his medicine. After a day or two he began to be tired of taking the tincture of aloes, and his attendants urged that he should be allowed to take aloes in pills. After more than one effort, the point was yielded with great reluctance and apprehension of evil consequences, on the part of the writer; but notwithstanding all the promises made to take care and keep up the bilious evacuations, in a day or two information was brought that the discharges had ceased, or nearly so, and that the patient had become delirious. This was just what had been apprehended. I never knew a man fail to recover who was kept discharging bilious matter without a days interval by such medicines, calomel and aloes; and I never knew one who, if the case was a very severe one, was not greatly endangered by one days cessation; and they frequently die; first becoming delirious or stupid. This was precisely the case with Douglass. He was delirious for two days and died on the sixth day after every symptom of cholera had disappeared—when his recovery was as certain as it is in a severe bilious fever; and such a case I never yet knew end in death when the discharges were kept up day by day.

There was scarcely a sign of salivation about his tongue or gums, or any part of his mouth.

The following cases all occurred during my confinement to bed.

Case 27. J. H. Brown, about 26 years of age, who was intimate in my house, came to my bed-side and told me he had had that morning a very copious discharge like dirty water. He had been too much engaged in sitting up with the sick, and had been very unwell for a week previous to this time, and had been taking calomel of his own prescribing which had brought off black bilious matter. While the discharges were still black, he ceased taking medicine, and was occupied the whole day with a sick friend making great exertions until late at night. It was the next morning that he called, as above mentioned. He had just breakfasted heartily. He was advised as the diarrhoea had just commenced, to take 120 grains of calomel; but not to trust himself to that quantity if the disease was not immediately checked. If there was another discharge he was to inform me. I heard no more of him till past 12 o'clock, when a friend stated he had not taken the calomel until near ten—that he had immediately thrown it up—and instead of informing me of the fact, had taken 70 grains more—that the disease had made rapid progress, and that he was then vomiting and purging profusely, severely cramped, was cold and his pulse almost gone. He then took a larger dose, but threw it up immediately, and upon repeating the dose, the same result followed. His attendants then gave up all hope of saving him. By one o'clock he was cold and without pulse, and he died that evening.

Case 28. On the morning following that on which Mr. Brown called, Mr. Boyd came to my bed-side and stated that he had had a diarrhoea for several days, and that it had now become profuse. He likewise had been sitting up four or five nights in the week with the sick—devoting to them his whole time, except a few hours of sleep chiefly in the day. Alarmed at the result of the case of Mr. Brown the day before, I

directed him to take a tablespoonful of calomel and to repeat it every six hours until the watery passages ceased. He took four between 4 in the morning and 10 at night. After the last there was no watery discharge, and in a few hours after, (early next morning,) he had bilious discharges, which were kept up without cessation, by tincture of aloes, and he recovered entirely in a short time. He was not at all salivated.

Case 29. On the morning after Mr. Boyd called, Mr. Brittan sent my son into my room to tell me that he had copious watery passages and wanted me to prescribe for him. He is about 19 or 20. He also had been closely attending on the sick night and day. He was advised to take a tablespoonful of calomel and repeat every six hours until the watery discharges ceased. He took that day four, and the next three—the discharges not ceasing until some time after the seventh had been taken. He took, moreover, three other similar doses, during the same time, having thrown up three. The *repeated* doses were given immediately, after the regular one was thrown up. A few hours after the watery discharges had ceased, on the evening of the second day, bilious passages appeared, and were kept up, as before, with tincture of aloes, and occasionally pills of aloes and rhubarb, for a week. He entirely recovered. He was somewhat salivated.

Case 30. A servant girl belonging to the family of the writer was taken at night with violent vomiting and purging—Dr. Hopson, who happened to be at the house, gave her a tablespoonful of calomel, and she having thrown it up, he gave her another. In the morning she took another, and in the course of the day black bilious passages appeared. These were kept up with tincture of aloes for a week or more. She recovered perfectly, with some salivation.

In some cases the difficulty of purging after the watery passages had ceased and bilious discharges appeared, was very great. Some patients took a wineglassful of tincture of aloes every two hours day and night. Others took pills as regularly, with the effect of only producing a few bilious

passages daily—precisely as is often experienced in every form of autumnal disease.

On looking over the preceding pages, I find it stated, (p. 334,) that bilious passages were produced in nine cases out of ten treated in the way proposed. The truth is that this proportion was exceeded. Out of about fifty cases, this effect was produced in all but two: in both which the patients made such objection to the medicine offered them, that the plan was not followed up.

In support of what is said (p. 341) of the consequences of withholding calomel too soon, the following cases are worth recording. A boy of 14 had a violent attack of cholera in 1827. He took 20 grains of calomel at mid-day, and repeated it that evening. The writer being called next morning in consultation in his case, advised that he should have at least 20 grains every six hours until bilious passages were procured. He took three such doses that day, and three the next; and in the course of the following night the discharges were copious and green. The attending physician had been opposed to persevering in the use of the calomel, and in the morning, before the regular visiting time, determined with the consent of the relations to diminish the quantity, and gave ten grains with as much aloes. The writer on visiting the patient expressed apprehensions of the result, urging that it was too soon to reduce the quantity of calomel after having with such difficulty succeeded in restoring the secretion of the liver. At the mid-day visit, the profuse watery passages were found to have returned; and no effort afterwards made produced any good effect, and he died next day. Calomel was not used after the return. The writer was overruled in every thing by the attending physician and another who was a relation. At the same time, a girl of 9 or 10, had a similar attack. She was directed to take 10 grains of calomel every hour until she had taken 60 grains; which she did. In a few hours afterwards she had copious bilious passages, quite black, and in three days she was at school.

The writer would do himself injustice if he were to leave

the reader under the idea that he is in favour of large doses of calomel on all occasions. On the contrary, he is fully persuaded that he gives, in common, less calomel than most of the physicians of the southern and western country. In all ordinary epidemics, his prescription is the pill composed of equal quantities of calomel, aloes and rhubarb, aided occasionally when the bowels are slow, by the substitution of scammony for rhubarb, and sometimes by using the infusion of senna in addition. In most cases four or five of these pills, containing eight or ten grains of calomel, given daily, answer the purpose. And if there is need to increase the dose, the bulk of cases, in common times, are managed with less calomel in this way than in other common modes of practice. It is only in those cases in which without extraordinary efforts the patient is to die, that the writer would advocate the use of extraordinary doses. In this as in all other things of the kind, experience is to determine what is safe and what is not; and experience has decided that there are cases of autumnal disease in which small doses of calomel are utterly insignificant; and in which increased doses effect that which the smaller failed to do. This is manifest from the fact that the writer can remember when calomel was seldom given at all, and when Dr. Rush was vilified for using in the highest grade of our autumnal fevers, 10 grains of calomel with as much jalap; while at the present day, from oft repeated experience of the inefficacy of smaller doses, there are thousands of physicians who often administer from 20 to 100 grains of calomel, with the effect of curing many such cases as every day ended in death in Philadelphia in the time of Dr. Rush. The testimony of those who say that they have never met with such cases, whatever credit we may be disposed to give it, proves nothing in opposition to that of those who have met with many of them; particularly as it is evident that the former cannot tell what quantity would have been required to succeed when they found small doses fail; and that they might have found cases requiring large ones, among

those who died because they failed to effect the object they were aiming at, the discharge of bilious matter.

As to the extent to which we may safely go in the administration of calomel, it is evident that experience alone can decide. If doses which 20 or 30 years ago would have been considered destructive, (if they had been proposed,) are now known to be perfectly safe, and necessary in many cases; it is plain that such as are now considered dangerous, may hereafter be deemed both safe and necessary; and may be found effectual in recovering patients in circumstances in which they are now given up as past the reach of medicine. A physician who a few years ago was with difficulty, persuaded to give 30 grains of calomel to a patient of his whom the writer visited by his request, has by subsequent experience been led to use it in larger doses; and during this season, to give half an ounce at once with decided good effect. Another, who some time since with difficulty consented to give a patient 60 grains in a most critical situation, and refused next day to repeat it although the first dose had produced a good effect, lately stated to me the following case. He was called in the morning to a young lady in cholera and gave a considerable dose of calomel, to which he was led by observation of its good effects in the current season. In the hurry of business he overlooked the patient until evening, when he found her, as he supposed, past recovery. He however determined upon an effort to save her, and gave her near an ounce more. In the morning he was very busy, and the impression that she must be dead was so strong that he did not call. In the evening however, some circumstance led him to call at the house, when he found her walking about. The calomel had operated finely, and she had discharged a great quantity of bilious matter.

The writer has had the pleasure of hearing from a number of the graduates of the school in Lexington, who inform him that they have succeeded in curing almost every case of cholera with free doses of calomel. They have generally begun with such doses as they supposed the case called for,

and repeated according to circumstances. One who has been very successful, states that he doubled the dose every two hours until the disease was decidedly controlled. One in this neighborhood, who has given large doses and repeated until the watery passages ceased, states that he did not lose a case when he had the sole management. They speak of having given about a thousand grains of calomel to many of their patients. A physician who has been led by experience of the good effects of increased doses, within the last four years, to give teaspoonful doses this summer in cholera, informed the writer that he had generally found it necessary to repeat them until the patient had taken about the quantity abovementioned, a thousand grains. This is a greater quantity than was taken by any of the patients under the sole care of the writer, except six. And this shows the advantage of the plan of giving at once as much as the physician judges will effect the object in view; for in a large majority of these cases bilious passages were produced by a single dose; which never exceeded a table-spoonful, which is considerably less than a thousand grains, and sometimes consisted of an ounce, a half ounce, and even less.

After having made so unreserved a disclosure of his practice in cholera, and particularly as the mortality in Lexington has been placed in connexion with the use of large doses of calomel, it will be deemed, it is hoped, no more than a proper act of self defence in the writer, to state the result. But as a correct opinion of a mode of practice cannot be formed from the event of cases treated by several physicians in succession, the writer will confine himself to those cases of which he had the sole management; which amounted to about fifty. *Three* of these terminated in death during his attendance, as before stated: one from beginning with insufficient doses, and the other two from opposition on the part of the patient, in consequence of which the plan of treatment was not followed. A *fourth* case, (No. 26) ended in death eight days after the writer had become incapable of personally attending to him, and six days after all signs of

cholera had ceased; manifestly after the patient had been put into that state we desire to produce, that of discharging bilious matter, because we consider it the high road to perfect recovery. These discharges, it is well known, it is necessary to keep up in order to recovery; and in this case, *this was not done*. Past experience therefore, leads the writer to the conclusion, that this patient died in consequence of this failure;—because he never knew a case in which, if kept up without a day's interval, the patient did not recover: 2. because he never knew a severe case in which, after having been established, and allowed to cease in the advanced stage of the disease, the patient did not become delirious or stupid, and die in a short time; which is precisely what happened here. *Another* died after all necessity for attendance had ceased, from having been taken out of bed in a weak state, notwithstanding strict injunctions to the contrary, and placed in a chair; where being left alone, she fainted and fell, and never recovered. *The sixth* was a very aged man, with ossified radial arteries, who by one dose of calomel was caused to discharge black bilious matter, but did not take sufficient medicine to keep up the discharges. He died in the second week or later after the attendance of the writer ceased.

It will be observed that case 27 is not mentioned as one of these—for the plain reason, that the writer was unable to visit the patient, and that the directions given were not followed: and this being the case, the writer is no more accountable for the result, than for that of any case in which his advice was asked *and not followed*. This case is not included in the fifty abovementioned.

There was a case or two also which it is proper to mention, in which the treatment was by calomel alone, but being in the commencement, in the hands of young men, yet students, unaware of the extent of the difficulty to be overcome, they were treated with inefficient doses until too late. Of these the case of Miss P. was one. While on a visit to a patient in the house she told me in a remarkably cheerful manner, that she had a diarrhoea, and had taken 35 grains of

calomel, and afterwards 60, but that it still continued. She was then walking about the house, with a good colour, and apparently in perfect health. Her brother who practised in the family mentioned her case also, and spoke of giving her a teaspoonful of calomel, which I encouraged him to do. Whether this was the same dose which she called 60 grains, is somewhat doubtful. This was given about 11 o'clock. Between one and two I was called in a hurry, and found her purging excessively, and lying on a pallet in a large airy room. She took an ounce of calomel immediately. But the purging was so profuse that I was called again in an hour, and found her lying in the same place, with a fine colour still, but purging most profusely. She said she felt as if bleeding to death. She was cold, and in a few hours dead, without any cramp worth speaking of. This patient would have been saved in all probability, by more efficient doses in the commencement. Subsequent experience moreover, induces me to believe that I gave her up too readily. The large dose should have been repeated perhaps more than once. This case also is not included among the fifty; because not under the sole management of the writer.

A number of these fifty patients were salivated, but few considerably so. The worst case was that of the old man before mentioned, who, the writer is satisfied from the aversion he had to aloetics during his attendance, did not take sufficient medicine afterwards. Of the six who took most calomel four were not salivated; and the other two not much.

A pregnant woman, in the ninth month, not very dangerously ill, took a teaspoonful of calomel, and repeated the dose. She soon recovered, and about a week afterwards was confined and did well.

The writer cannot close without expressing the great obligation he feels himself under to Professor Short for his attention to many of the cases above mentioned, after his fall. They were all critically situated, and two of them who were saved, the writer expected would die.

Postscript.—On looking over the preceding pages a few additional remarks were suggested.

1. In addition to what is said at the bottom of p. 313, it should be stated, that the ground between Water and Main Streets, is lower than either in many places; and therefore well adapted to hold water in wet seasons.

2. The nuisance mentioned at the middle of p. 313 was on the square north of *Short Street*, the next street north of Main: but there are no buildings between it and the houses on Main Street, the back-yards of which extend to it. They are, moreover, as low and flat, at least, as the ground on which the nuisance was. This difference of position of the nuisance affects somewhat the statements made respecting it in p. 314, at the upper part; but not materially.

For *the half*, line 4 in p. 314, read *part*: and for *only one* in the next line, read *none*. These corrections were made after the writer became able to ride out and compare the account with the places described.