

Table shewing the number of the principal Diseases admitted into the State Hospital, Sacramento City, with their average mortality and duration of treatment.

	June.	July.	August.	September.	October.	November.	December.	Total.	No. of deaths Per cent.	Average time of treatment.	Number of cases in Sacramento.
Intermittent fever,	...	6	6	11	12	3	6	45	1.2	7 dys	5
Bilious remittent fever,	4	6	21	21	38	18	8	116	4.3	8	6
Congestive fever, . .	...	2	...	2	...	...	...	4	50.0	6	1
Typhus fever, . . .	...	...	1	4	12	5	11	33	39.7	13	3
Continued fever, . .	3	2	2	...	1	2	...	10	...	9	1
Erysipelas, . . . .	...	...	1	4	3	1	2	11	18.1	7	
Diarrhoea,	3	1	...	1	1	3	...	9			
Chronic diarrhoea, . .	4	3	2	3	5	3	1	21			
Dysentery,	2	1	1	...	1	2	6	13	56		
Acute bronchitis, . .	...	...	...	...	...	3	...	3	54		
Chronic bronchitis, .	1	...	2	...	1	...	...	4			
Pneumonia, . . . . .	...	...	...	...	...	...	5	5	100		
Pleurisy,	1	...	...	...	...	1	...	2			
Acute rheumatism, . .	9	3	2	...	...	...	...	14			
Chronic rheumatism, .	3	2	5	7	4	...	2	23			

ART. IV.—*On the Dengue or Break-bone Fever, as it appeared at Savannah in the Summer and Autumn of 1850.*
By RICHARD D. ARNOLD, M.D., Savannah, Georgia. (The Charleston Medical Journal and Review, vol. vi., May 1851, No. 3, p. 323.)

The winter of 1849–50 exhibited to the practitioners of our city, as an epidemic, a disease which they had met before only in isolated cases; I allude to erysipelas, which commencing late in the fall of 1849, prevailed during the whole winter, and until the end of May, to such an extent as fairly to entitle it to be considered an epidemic. I mention this fact, not to give any history of it, but to shew that, taken in connection with the general spread and long continuance of measles in 1847 and 1848, the existence, to a considerable degree of scarlatina in 1849, and the subsequent appearance of the Dengue in 1850, there has been for the last few years what may be termed a decidedly epidemic exanthematous constitution of the atmosphere.

I use the phrase constitution of the atmosphere, for want

of a better or more definite one ; for, with all the resources of modern art, the ultimate cause of epidemic diseases has eluded research, and we are obliged to go into the domain of conjecture. The only appreciable modifier of disease is the temperature of the atmosphere, as we know changes in it are often the exciting causes of catarrhs, rheumatism, &c. ; and temperature is itself modified by locality and latitude. In a few words, although a well-digested meteorological table may record all the variations of temperature, it cannot at any time afford a solution as to the ultimate cause of epidemics.

After all our inquiries and conjectures, we are compelled to content ourselves with repeating the old adage, "*Latet causa ; vis est notissima.*"

During the spring of 1850, a few cases of scarlatina occurred in my practice ; but although they were very severe ones, I could not say that they were numerous enough to justify me in stating that this disease was epidemic.

I was absent from the city during the month of May. June was remarkable for its pleasant temperature. Refreshing showers fell, and, although, as a general rule, this month is hot and dry, it was not so in 1850. There was very little sickness of any kind during this month, except a few cases of bowel affections. July, on the contrary, was intensely hot and very dry. The pleasant weather of June spoiled us for the heat of July, and every body seemed really to suffer from the oppressive heat. As a general rule, when the weather is dry as well as hot in the early summer months, there is very little sickness amongst us. Last July was no exception to this rule. About the end of July, the report reached us that the break-bone, or Dengue fever, was prevailing very extensively in Charleston.

About the beginning of August, our endemic climate fever began to appear, as customary. This fever is always periodical in its character. At least, in the course of twenty years' practice, I have never met it in any other form than that of intermittent or remittent, in their various modifications. A daily communication is kept up between Charleston and Savannah by steam-boats, and there was every opportunity afforded for a direct importation of the disease, if it preferred that mode of coming amongst us.

The fact is, that the Break-bone or Dengue fever was no stranger, although a good many years had elapsed since it had made a regular sojourn amongst us.

As brief a reference to its past history in this city as perspicuity will permit, may be interesting in more than one

point of view ; and I am the more inclined to make it, because, with all deference to so high an authority as Dr Dickson, I think he has somewhat misapprehended the views entertained of this disease by my esteemed preceptor, the late Dr Wm. R. Waring, of this city.

In Dr Dickson's now classic essay upon Dengue, published in Dr Bell's Select Medical Library in 1839, speaking of Dr Waring, he says, that Dr W. "makes his break-bone fever of 1826 identical with the autumnal fever of 1827, which again he looks upon as identical with yellow fever ; thus mingling in promiscuous confusion, yellow fever, ordinary bilious remittent, breakbone and Dengue."—(P. 12.)

In the April number of the North American Medical and Surgical Journal of 1830, Dr Waring published an article on "the epidemics of Savannah," in the beginning of which we find the following sentences, which, by leaving out the words "novel and unknown here," might well be taken for a general description of the epidemic of last summer.

"We commence our account with the fall of 1826, which was dry and warm. It produced a species of disease novel and unknown here, which the people designated by the significant denomination of break-bone fever. *Its distinctive features consisted of violent pain of the head and loins, with a sort of rending of the bones at the extremities, of a single paroxysm of various duration, and a temporary inflammation of the skin and eyes.* Scarcely any person escaped, of whatever colour, age, sex, constitution, occupation, or habits ; and yet notwithstanding this extensive prevalence, no instance of death occurred, at least of which I have been informed. The first cases excited great alarm ; the fury of the symptoms, and early illness into which the patient seemed to be precipitated, presented the aspect of a disease uncontrollable and speedily destructive. A little experience, however, discovered that the pain and suffering very far surpassed the degree of peril, and that instead of being, as it threatened to be, an affection beyond remedy, it really required scarcely any remedy at all. It was an ephemeral gust, which did not destroy, but prostrated the muscles and the digestive function, and left behind it as great a sense of general debility as results from a tedious attack of autumnal fever."

A little further on, speaking of the diseases of the months of July, August, September, and October, 1827, he says,

"These latter portions of the year gave rise not merely at different times, but also at simultaneous periods, to some very extraordinary varieties in the prevalent fever. Perhaps two-thirds might have been distinct intermittents, while

another third was composed of remittents nearly intermittent, of yellow fever in its worst degree, and of *genuine eruptive break-bone.*"

The distinction is here kept up most clearly, and the epithet *eruptive*, applied to the break-bone, is particularly significant. He further says,

"Cases of black vomit and break-bone were so minutely similar *in the first stage*, that you could not identify them."

This is not extraordinary to any one familiar with the excruciating pains in the lumbar region and the lower extremities which so often usher in attacks of autumnal fever, or indeed any severe febrile affection. Nay, this has induced some physicians in the southern country to look to the spinal column as the seat of the morbid derangement in our climate fevers.

It may illustrate this point, to state that in relation to these preliminary pains I have twice made a mistake in my own person, each time being wrong as to the disease. In 1828, while a pupil with Dr Waring, and when, as I shall detail hereafter, the Dengue was prevailing epidemically in Savannah, I was seized with some fever and such excruciating pains in my loins and lower extremities, that I was certain that I had the Dengue. I was mistaken. This was but the ushering in of a severe bilious fever, which nearly cost me my life. The events of that sickness are too firmly impressed on my memory for me ever to forget them.

As to my second mistake, I quote from my article on the epidemics of Savannah, published in the Charleston Journal for July 1849, when giving an account of the attack of Dengue, from which I suffered in the fall of 1848. When describing the commencement of the attack, I said,

"I felt an uneasy sensation down my thighs and legs, and a singular weakness in my knees. These symptoms increased so much on me, with the addition of a violent pain in the small of my back, that I hurried through my business and returned home, apprehending that I had the premonitory pains of a malarial fever."

Here was an error, again; these were the preliminary pains of Dengue.

Again, Dr Waring says, in relation to the year 1828,

"About the last of August, north-east winds resumed their usual predominance, and another *eruptive epidemic* was ushered in. It differed so slightly from the break-bone of 1826 and 1827, that in my notes I find the first cases called by that name, according to popular usage. This distinctive appellation, however, was soon supplanted by the Spanish

word *Dengue*, which had migrated from Havannah to St Mary's, Savannah, and Charleston. The best explanatory denomination for common parlance, would have been eruptive rheumatism, or rheumatic eruptions, because it expresses the prominent form and features."

The last sentence is certainly as applicable to the epidemic of 1850, in our city, as it was to that of 1828. The next extract which I shall make from Dr Waring's paper, points out what differences existed between the epidemic of 1826 and that of 1828.

"I have said that Dengue was essentially the break-bone, which we had experienced in 1826, and also in 1827. The analogy was so striking, that I do not believe that we would have called it by another name, if it had not appeared in some other southern cities at the same time."

I beg to call attention to this testimony (published in 1830, but really written 1829), as to the identity of the two epidemics, then so recent.

To any practitioner who has seen cases of our recent epidemic, I think these quotations will prove that Dr Waring had noticed the peculiarities of Dengue with a careful and critical eye. It will be observed that he calls it "a disease novel and unknown here." He then details the symptoms distinctive of the disease, and points out wherein it differs from other diseases.

As to the pathology of the disease, Dr Waring was clearly misled by his devotion to the Broussaisian theory, which was then revolutionising the medical world. Every disease was a gastro-enteritis, in some shape or other. Dr W. was strong in his belief that this disease was a gastro-enteritis. Now that term in those days was applied to every disease in which the stomach was involved, never mind in what manner. This belief gave Dengue, in his view, some resemblance to other diseases besides yellow fever. After detailing a case, he says,

"The pathology of Dengue thus exhibited, *assimilates* curiously to three different diseases of gastro-enteritic foundation, viz., gout, erysipelas, and yellow fever."

Now it can hardly be thought that this is meant for more than to designate some points of assimilation. This assimilation is pointed out to uphold a theory, and it in no manner means to make this disease as *identical* with gout, erysipelas, or yellow fever. More to shew that this gastro-enteritic ground was merely theoretical, he says expressly,

"As no case of regular Dengue terminated mortally, it is not in my power to furnish any example of the morbid ana-

tomy of its simple state, and to demonstrate, through this corroborating means, its gastro-enteritic character."

The resemblance to yellow fever is confined by him expressly to the first stages of the disease. Now, is it not always a difficult task to distinguish the peculiar nature of a fever in its very first stage? Are there not certain preliminary symptoms common to all fevers, indicating the general febrile disturbance of the system, but by no means what peculiar cause is producing that disturbance?

Here, then, I rest my retrospect of the history of Dengue, so far as this city is concerned, with the exception of its partial prevalence in 1848, as detailed in my article in the July number of the Charleston Journal for 1849.

On the morning of the 29th of August 1850, I was summoned in haste to see Mr T. M., a resident of this city. I found on my arrival that he had passed a restless and painful night, and that he was then suffering acute pain in the lumbar region, in the lower extremities, and in the head, from one temple to the other. The skin was hot and dry; the tongue coated with a thick white fur; the pulse accelerated and rather full. The reader will see in this description nothing more than what he has observed in many instances, of the ushering in of an ordinary climate fever. I prescribed a purgative of salts, senna, and manna. On my visit in the afternoon, the fever was as high as ever, and there was no abatement in the severity of the pain. The medicine had not acted freely, and as the head was much complained of, I directed a purging enema and a warm foot-bath.

On my visit on the 30th, the problem was solved. I discovered an eruption over the face and trunk, of red points, not minute like the flea-bite point of measles, nor in that crescentic form, which the aggregation of these points produces in that disease, but more resembling the eruption of scarlatina, in its interrupted form. The eruption was also attended with a tingling or itching sensation. I pronounced it at once to be the Dengue, or break-bone fever.

In the same row of buildings, a few doors off, the same train of events had simultaneously taken place with a child of about seven years of age.

Now I confess that, although from the fact that the Dengue was prevailing epidemically in Charleston, I had every reason to suppose that Savannah would not escape the epidemic influence; and that, therefore, I had been watching for some case of this disease, I did not suspect either of these two cases to be Dengue until the eruption made it palpable.

The symptoms were so analogous to those presented in

1848, two years antecedently, that there was no difficulty in settling positively the character of these two cases.

No new case occurred to me until the 4th of September. After this, the disease assumed an epidemic character, and spread in various parts of the city. As the chief point of interest in a description of this disease, is to settle its precise nosological character, I shall confine myself to a summary of the prominent symptoms developed in its appearance here.

The pains felt in all parts of the body, on the commencement of this disease, were very severe. In this epidemic, the pains were decidedly more muscular than arthritic. The muscles of the back were very much affected, as also those of the lower extremities. But there was universal soreness in all the muscles, rendering any change of position painful in the extreme. In infants, I very frequently diagnosed the presence of true Dengue, from the evident pain produced by any motion of the body, or by simple handling.

It is easy to account for the name of this disease, as far as Break-bone is concerned, for in case after case have I heard the exclamation from the lips of the patient, "Oh, my bones are broken." Sometimes the pain was more predominant in one particular part of the body than in another. One gentleman declared to me that he felt that he must die, if I did not do something to relieve the oppression across his chest. Another complained of a sensation across his thighs, as if a heavy rail had been laid over the middle of them.

In the majority of cases there was a severe headache, shooting from temple to temple; an injection and watering of the eyes, and an intolerance of light, and acute and intense pain in moving the eye-balls. This was evidently owing to the affection of the sclerotic coat. Most generally the tongue was furred white, and there was a craving for cold drinks.

The pulse did not exhibit the disturbance that would be expected from the severity of the other symptoms. It was but seldom accelerated beyond one hundred; generally, it was but little over a hundred. I do not recollect of ever having met with it as high as one hundred and twenty. These preliminary symptoms were of longer duration in some than in others. They were followed, at various intervals of time, by an eruption, which, taken in connection with the anterior febrile disturbance, I consider as distinctive of the disease. I did commence to keep notes of the time at which the eruption appeared, after the first febrile symptoms; but the cases differed so materially in this particular, that I

found it impossible to ascertain any definite rule. Sometimes, on my first visit, I found an eruption developed. Then again, it would become apparent the second day, or the third. When the eruption was tardy, it was very puzzling to know whether you were about to have a climate fever or the Dengue. The coats of the stomach were evidently more affected in these cases than in the others.

The skin was certainly the outlet of the system, by which the morbid matter of this disease was to escape, and hence, when any obstacle occurred to this, the internal organs were more disposed to suffer. The quicker the eruption made its appearance, the shorter was the sickness. The pains subsided very shortly after the appearance of the eruption, but the sense of debility left behind was really astonishing. Prior to the eruption, the fever was always continuous, never mind what time elapsed between it and the first seizing of the disease. In most cases, there was no return of the disease. The digestive functions were very much weakened, and, in some, there was an irritability of stomach which was very troublesome. In general, I should say that there was very pure debility of the stomach after the acute stage of the disease; for, contrary to Dr Waring's experience, I found that during convalescence, so far from producing any uneasiness, it was impossible to coax the stomach into digestion without the aid of some stimulus, either a vegetable tonic, a little weak brandy and water, or porter.

Those cases which were followed by irritability of the stomach, did not, however, bear this treatment. There was in these an evident derangement in the mucous coats of the stomach, and a disturbance in the functions of the liver. The tongue was wont to shew a bilious fur, and a mercurial purgative proved the most efficient means of restoring the digestive organs to their healthy tone. It was not until after this had been done that you could venture on the tonic and stimulant method.

Now, in this secondary affection of the stomach and liver, I see nothing more than a complication arising from the general predisposition to gastric disease, which always exists in warm climates during the summer and fall months. It was not distinctive of the disease, as it existed only in a small portion of those affected. But the eruption was distinctive, and I never considered a case one of true Dengue, unless this made its appearance. Another distinctive feature of this disease was, that the pains were evidently neuralgic in their character; for even when they lasted twenty-four, and thirty-six, and forty-eight hours, they did not

produce that disturbance of the general circulation which they would have done had they been of an inflammatory nature.

Now, when reference has been made to the difficulty of deciding between an attack of Dengue, and one of climate fever, it must be recollected that, in common with Dr Waring; I confine it to the first stage of the Dengue. Remission or intermission would undoubtedly take place in climate fever in the course of twenty-hours. But the paroxysm of fever ushering in Dengue was a continuous one, even if it lasted forty-eight hours.

That after the distinctive eruption has appeared, the patient has suffered intermittent or remittent fever, does not affect the question; for an attack of the Dengue afforded no exemption from an attack of climate fever. I treated many patients, during last season, who had first had Dengue, and after an interval of two or three, or four weeks, suffered from climate fever, and *vice versa*. If, then, we have a disease, which, as a rule so very general as to admit of few exceptions (and to which I myself know of none), is ushered in by severe muscular and arthritic pains, one or both, and by a continuous paroxysm of fever, and ending in a cutaneous eruption, why should it be even assimilated to climate fever? In many cases under my treatment, the patient, after the eruption, has improved so much that I have ceased to attend, thinking him quite well; but the next day I would be summoned back, and find my patient quite sick, with fever and gastric disturbance. I always considered and treated these cases as complications of climate fever, because they always gave more or less evidence of gastric and biliary derangement, and invariably assumed a remittent or an intermittent form.

During the whole existence of this epidemic amongst us we had our usual endemic autumn fever, assuming as common, either an intermittent or remittent type. I have attended cases of each lying alongside of each other, among children of one family, and also among the poorer classes of whites, (foreigners), who huddle together in an extraordinary manner; and yet each has run its course unmodified by the presence of the contiguous disease.

The eruption, as far as I saw it, was only of two kinds, one in patches, the other diffused. Both were smooth, until the cuticle began to dry and desquamate. Some few cases of eruption were as red and diffused as I ever saw in true scarlatina. In all, the eruption could be pressed back by the fingers, leaving a white mark until the blood rushed back

into the capillaries. By this mode I convinced very many persons (white of course) that they had an eruption; for, in some instances, the blush of the skin was very faint, but pressure would prove, by the superior whiteness left under the finger, that there was an injection of the vessels of the periphery. This also proves that the cutaneous inflammation is seated in the outer or cuticular surface of the *cutis vera*.

The duration of the eruption, and the absence of any anginose affection, as well as the violence of the preliminary symptoms, distinguish it from scarlet fever. The eruption in Dengue was the sign for the abatement of the symptoms. So far from this being the case in scarlatina, we know that generally the worst symptoms are developed after the eruption has appeared.

In scarlatina the skin never breaks out into a perspiration on the first appearance of the eruption. In Dengue, after the eruption has been well thrown out, the fever goes off by moisture on the skin. The eruption lasts but two or three days in Dengue; in scarlatina, it lasts six or seven, hence there is decidedly more desquamation of the cuticle in the latter than the former. The tongue also affords a guide. In the commencement of the eruptive stage of scarlet fever the mucous membrane of the mouth participates in the efflorescence, and as the external skin begins to throw off its cuticle, the cuticle of the tongue is also thrown off, and the tongue appears bright red and shining; and the papillæ, being deprived of their cuticular sheath, become very prominent on its surface. When scarlatina prevails epidemically, it is by the tongue that I diagnosticate this disease among our blacks. Whatever redness of the lips, tongue, and gums, may take place in Dengue, it is not, as far as any case has come under my observation, ever likely to be mistaken for the redness of scarlatina; for it is less intense in colour, lasts a much shorter time, and is not followed by that throwing off of the cuticle of the tongue, which is so apparent in this last disease. In two cases occurring in children I saw general œdema follow the desquamation of the cuticle, exactly as it does in scarlatina. They were both very fair, thin-skinned children, and I suppose the skin was in them more than usually sensitive.

The heat of the weather produced an unusual quantity of prickly heat; (*lichen tropicus*.) Any one who has seen the two eruptions would not readily confound them, if he should examine with any care. Prickly heat is a distinct papular disease, that is to say, consists of hard and solid elevations.

I was very inaccurate in my article of July 1849, when I spoke of the eruption as being papular in those cases occurring in the fall of 1848, and I must have decided too hastily, for now I plainly see the difference between a real papular disease and the eruption of Dengue. I meant to express the fact, that the eruption occurred in points or patches, as in measles, and not in the uniform diffuse redness of scarlatina. But this was not the case during the last summer, for many of the cases presented a uniform, scarlet-red diffused eruption. There were also an uncommon quantity of boils last summer, among grown persons as well as children. Indeed, I think I might safely say that they were entitled to be considered epidemic also.

My treatment of this disease was very simple. I purged with Epsom salts, either plain or in infusion of serpentaria; directed sinapisms when the pains were very intense, and hot foot-baths; sometimes I gave antimonials as sudorifics, never as emetics; to allay thirst and produce perspiration, I ordered hot lemonade; after the bowels had been moved, I used opiates very freely, and with most decided alleviation of the painful symptoms; where there was no irritability of the stomach, I preferred Dover's powder to any other. I am satisfied that not one quarter of the cases that occurred were treated by physicians. The disease was very general, and I believe that very few in the whole city escaped it. This is satisfactory proof, that this epidemic was as harmless in its results upon life as its predecessors have been. I know of no instance of a death having occurred from simple uncomplicated Dengue. But the suffering in many cases was very great, and I am satisfied that it was very greatly alleviated by remedies. Moreover, it was much to be aware that the violence of the symptoms was no evidence of the danger of the disease, and hence we were enabled to avoid heroic depleting remedies, and to preserve for the patient as much strength as possible, for what always proved a tedious convalescence. Indeed, I must consider the extraordinary debility left after an attack of this disease (it being so comparatively short in its duration), and the slow and tedious convalescence, as peculiarly characteristic of it.

And now the question occurs, what is Dengue? I have no doubt that it ought to be classed as a specific exanthematous fever. The variations observed in it, in its epidemic existence at different times, are no greater than those which occur in scarlatina or rubeola, at various times of their prevailing. Its variation, as it occurred here in 1828 and in 1850, consisted in the fact, that in the former year it was more arthritic.

Dr Waring, in the article cited above, speaks of the alleviation of the pain, "after a bright red eruption had made its appearance." He also asserts that "the eruption was developed in most cases;" and that in "some cases it spread in patches; in others, in an unbroken blush, over a greater or less extent."

Here, then, is a disease presenting peculiar symptoms, viz., a febrile disturbance, and violent pains in the limbs or joints, or both, preceding an eruption of a bright red colour, at intervals of time somewhat varying, but seldom exceeding forty-eight hours; this eruption of a determinate duration in the majority of cases.

At the same time that this disease prevails there prevails also another disease endemic to this city in the summer and fall; cases of each are seen in juxtaposition, and each presents its distinctive peculiarities. Whatever points of assimilation there may be between them, however the digestive functions may be disturbed in each, there is no identity.

I know that some physicians, when an epidemic prevails, consider that all diseases then occurring are modified by its influence. This is true to a partial extent. But the effect is the development of the disease itself on the least exciting cause, and not the development of a hybrid compound. Now during the last season I treated a great number of climate fever, intermittent and remittent. There was not the slightest difficulty in deciding upon their character and treatment, after sufficient time had elapsed to shew their periodicity. But, when I was first called to a patient, and was asked "Have I got the Dengue?" my answer invariably was, "I will tell you in a day or two." If the eruption did not appear, I did not consider it a case of Dengue. On this point the epidemic shewed some variation of symptoms from what it did in Charleston; for I infer from Dr Dickson's recent article on Dengue, that the eruption was deficient in a great number of cases there. I say positively that I met with no case which I thought entitled to be considered Dengue, in which the eruption did not appear at some period. I am also inclined to think that this disease appeared in a more simple form here than elsewhere, from the fact that Dr Campbell, of Augusta, styles it a "truly Protean epidemic," as seen in that city. Beyond that variety of symptoms which any disease shews in different individuals, I could not apply this term to the epidemic here. On the contrary, it was marked and distinct. Of course some were affected more violently than others, presenting variety as to the intensity of pain, and as to the affection of the digestive functions. Many persons who had the disease here did not go to bed.

There are two circumstances about this disease, as it has shewn itself in our city, which merit consideration.

First, It has shewn itself here to be a city disease, as yellow fever is. It was extensively epidemic here in 1826, and 1828, and 1850. Almost everybody in the city had it. Speaking of the epidemic of 1828, Dr Waring gives us the following distinct testimony.

“I have said that Dengue was essentially the break-bone which we had experienced in 1826, and also in 1827. The analogy was so striking that I do not believe we should have called it by another name, if it had not appeared in some other southern cities at the same time. The points of resemblance were the universality of both diseases, the same gradual progress, by which the entire population became involved, excruciating pain of the limbs and loins, the same species of cutaneous inflammation, singular violence and short duration both, their common characteristic of forming but one paroxysm, red injection of the vessels of the conjunctiva, uniform recovery.”

In 1827 our city was visited epidemically by yellow fever, its last epidemic visitation. Further on, he says, referring to the years 1826, 1827, and 1828, “As regards yellow fever, break-bone, and Dengue, the remote cause confined itself to the boundaries of the city proper.”

This has not been the case with scarlet fever and measles. They have prevailed extensively on plantations. Now, although Dengue prevailed for a series of three years, viz., 1826, 1827, and 1828, in the city proper, and during two of those years, was very general, we here have distinct testimony as to its being confined to those limits. The same occurred in 1850. For aught I know a few isolated cases may have got into the country surrounding us, but the disease certainly never became epidemic there.

Dr James P. Scriven, of this city, who was a practitioner in 1826 and 1828, in a conversation with me, mentioned the fact of the confinement of this disease at that time to the limits of the city, as a peculiarity in it. He thus corroborated the observation of Dr Waring. Dr S. is one of the most extensive planters on the Savannah river, and he stated that he was not aware of the occurrence of a single case on any of his plantations, during the past year.

Second, This disease is undoubtedly affected by frost. The diminution of cases after a frost last fall was as marked as the diminution of cases in our endemic climate fever usually is. Persons who had the seeds of disease latent at the time became affected afterwards. About the beginning

of November cases became quite rare, but a case was occasionally met with. On the 18th November I saw the last case of the season, as far as regards my experience. It occurred in an infant eight months old, who had been absent during the summer, but had returned about the end of October.

How did this disease originate? When a definite answer is returned, as to the origin of smallpox, scarlet fever, measles, or hooping-cough, I shall expect one to this question.

I have not aimed at giving any particularly graphic description of this disease, as it appeared here last summer. I have been struck, however, with the fact of its former epidemic prevalence here, in 1826 and 1828. A careful perusal of Dr Waring's admirable article has convinced me of the identity of these former epidemics with the one of 1850. Both Dr Waring and Dr Daniell, of this city, as quoted by Dr Dickson, contended for the identity of the break-bone of 1826 and the Dengue of 1828. As eyewitnesses, and as having given their testimony many years ago, their evidence cannot be set aside to suit any theory. Dr Dickson, in his first article on Dengue, dwells with emphasis on the testimony of Dr Stedman, as to its starting-point in this hemisphere being at St Thomas's in 1827. How it happened to come to Savannah in 1826 will, I suppose be solved at the Greek calends. Dr Dickson acknowledges the identity of the epidemic of 1850 with that of 1828; and Dr Waring and Dr Daniell, the identity of that of 1828 with that of 1826. Here is the chain of evidence complete. It certainly did *not* come to Savannah from St Thomas's in 1826. The truth is, that there is a singular propensity in communities to blame other communities for the origin of epidemic diseases. If I mistake not, in Charleston the scape-goat for yellow fever is Havannah. Now, on the 1st day of December 1849, I treated a decided case of yellow fever, terminating in black vomit and death, which had been contracted in Charleston by a foreigner, who had stopped there two weeks on his way hither. I was called in on a Saturday. The man had arrived the previous night in one of the Charleston boats. On Sunday he threw up black vomit, and on Monday he died;—and there was the end of it and him. Now, had this case occurred early in the season, and had others occurred after it, the contagionists would have blamed Charleston for all such cases. I should not; because in 1839 I saw two cases of yellow fever, ending in black vomit, occurring under circumstances which ought to have favoured its spreading. Yellow fever prevailed epidemically in that year in Charleston and in Augusta. At

the latter end of August of that year a man who had just left Charleston, entered the hospital, the wards of which were then filled with cases of bilious remittent fever. He died with black vomit. About ten days afterwards another man entered, who had just left Augusta. He died with black vomit.

If these patients did not bring the disease hither with them it was sporadic here ; if they did, it certainly failed to propagate itself, under circumstances highly favourable to such propagation,—but not a single patient contracted the disease. Now, had there existed an epidemic tendency to this disease, and had it broken out shortly after the occurrence of these two cases, they would have been considered irrefragable evidence of its contagiousness. That a peculiar disease, like yellow fever, failed to propagate itself, when introduced into the wards of a fever hospital, in the very season of the year when climate fevers are endemic, is surely entitled to be considered more than negative evidence on the subject of its contagiousness.

My first cases of Dengue or break-bone occurred the 29th of August. This disease had been prevailing epidemically in Charleston for more than a month. There is a daily communication between this city and Charleston by steamboats, going from wharf to wharf. Here certainly was a means of communicating contagious matter. But no one in our city made any movement towards quarantining Charleston.

Neither of those cases had had any communication, direct or indirect, with Charleston. The disease was not then known to exist here. There was no centre in our city from which to trace their radiation. They were owing, according to my belief, to an epidemic influence. Persons say that means nothing. I differ from them. Those words express a fact, however unable we may be to solve the ultimate cause of that fact.

The Dengue last year was really epidemic. Persons from abroad, who came within our limits, were seized with it, without ever having been near anybody sick with it. I detailed, in my article alluded to before, the case of W. D., Esq., and my own, which occurred in the fall of 1848. Each was the only case in our respective families. No precaution was taken for isolation, in either case ; yet no other individual of our families contracted the disease. Is such a fact of no importance, in deciding upon the contagiousness or non-contagiousness of this disease ? I confess that I cannot account for the origin of the first cases, on the theory of contagion ; nor did the disease spread in a manner to induce

such a belief. It did not, to be sure, burst out at once in every part of the city; but it did break out at various points, within a very few days of the first cases, and, by the middle of September, it had visited every portion of it.

Fortunately, this disease, which seems to prevail so generally when it does appear amongst us, is one of no fatality. Tedious convalescence, and, in some few instances, one of which is now under my care, chronic arthritic rheumatism, are its only effects.

ART. V.—*Description of the City of Bahia; its Medico-Topographical Relations; its Salubrity; the Causes of that Salubrity.* By ROBERT DUNDAS, M.D. (Sketches of Brazil, &c. London, 1852. Lecture V., Pp. 200–285.)

The city of Bahia, the former capital of Brazil, is situated in latitude $12^{\circ} 59' S.$, and longitude $38^{\circ} 33' W.$, at the entrance to one of the most beautiful and extensive bays in the world, extending thirty-three miles in length, from north to south, and thirty miles in width, from east to west, and containing upwards of a hundred islands, several of which are inhabited. The city contains about 150,000 inhabitants; the population in 1803 being estimated at 103,000. It may be said to form two divisions, the one constituting the upper, and the other the lower city. The former division is built on a ledge of rock (chiefly gneiss, passing often into grey primitive greenstone and syenitic granite), about six hundred feet in height, and overhanging, as it were, the lower division. The latter, built on an alluvial soil, with a rocky substratum, stretches along the base of the hill, on ground gained in part from the bay.

The streets are irregular, ill-paved, generally narrow, and having a gutter in the middle, into which is commonly cast the filth and offal of the adjacent dwellings. The houses are unprovided with water-closets, and are otherwise ill-arranged for the purposes of ventilation and comfort. The slave population is numerous and crowded, the police inefficient, and a scavenger department unknown. The public sewers are few, the *becos* (alleys) leading from the principal streets serving as temples of Cloacina, and as receptacles for every kind of filth. In addition to this, the dead are interred within the churches and precincts of the city. I am, however, informed, that since my return from Brazil in 1842, the state of affairs here alluded to has undergone consider-