

latter supposition it may be asked, why did they not promote the object from the beginning? If the decision is given in favour of the injections, we may be enabled to exhibit them in cases where there is no fistulous opening, by passing in an instrument till it comes in contact with the interstitial substance between the fractured extremities of the bone, and inserting a tube to be kept constantly applied, through which the injections may be thrown. I think they will be found to excite an inflammation more extended, and with more certain success than the seton.

In these suggestions it is the furthest from my views to detract from the merits of our distinguished countryman, who has made a discovery valuable to surgery, for which he commands a tribute of respect from both hemispheres; on the contrary, it is acknowledged, his inventive genius has led to the present experiment and reflections.

*U. S. Naval Hospital, Pensacola, Sept. 30th, 1833.*

---

ART. VIII. *Observations on Scarlet Fever, as it Prevailed in Augusta, Georgia, during the Winter and Spring of 1832-33.* By F. M. ROBERTSON, M. D.

AS it is not our intention to enter into a detailed treatise on scarlatina; the observations contained in the present article will be confined to the disease as it appeared in this city and its vicinity, during the last winter and spring.

Scarlatina made its appearance in Augusta about the 20th of December last, (1832,) and has continued with more or less violence up to the present time, (May 1833.) Few families have escaped. In some, the disease occurred in its most benign form; in others, it assumed a most dangerous character. Occasionally only one individual in a large family was affected with the disease, and in other instances it gradually progressed through large families; each member, one after the other, suffering from an attack. It may be proper to remark, that it had been prevailing in the upper counties of Georgia, some time before its irruption here. In fact, during the whole summer of 1832, frequent reports reached us of its extensive prevalence in various parts of our country.

The disease manifested itself in our city in all its various grades, from the most simple form, up to the most malignant and dangerous. Some families had it so slightly that little medical aid

was found necessary, while their near neighbours were called to lament the loss of one, two, and, in some instances, three children. The three varieties, as described by DEWEES, ENERLY, and other writers, were well marked. They are, however, but different degrees of the same disease, without any radical or essential difference in the nature or seat of the primitive derangement. The identity of diseased action, as modified solely by the degree and seat of the primitive derangement, has been well established, and, by rigid analysis, many diseases which have heretofore been considered as essentially different in their nature, can be reduced to the same modification of the physiological state of some one of the organs or tissues. We adopt the division of the disease into *Scarlatina simplex*, *Scarlatina anginosa*, and *Scarlatina maligna*, merely on account of the assistance it affords in drawing up our plan of treatment, and not in consequence of any essential difference in their nature, for they are identical, owing their ultimate differences entirely to the difference of the degree of intensity of the derangement of the tissue first affected. Dr. Dewees describes the three forms, as follows:—

“By *Scarlatina simplex* is to be understood the simple constitutional disease, without any morbid affection of the throat. By *Scarlatina anginosa*, a high degree of the same disease—the throat being at the same time inflamed and swollen. By *Scarlatina maligna*, the same complaint, in still greater violence—the throat being affected, or otherwise, the symptoms malignant.”

As we merely intend giving our own views as to the nature, and more particularly, the treatment of the disease, we will not enter into a detailed account of the symptoms peculiar to each form, but merely notice the varieties that occurred in the cases which came under our observation. We shall speak, therefore, of what we have seen, and not of what we have heard.

It differed in no essential particular from that described by the numerous writers who have noticed the affection. It generally made its appearance by a chill or chilly sensation, nausea, vomiting, and, in some cases, slight diarrhœa; fulness about the head, particularly in the region of the orbits and frontal sinuses, and, in almost every case, more or less prostration of muscular energy. In the simple form, the eruption generally came out from the second to the fifth day. There was no regularity in the time of its appearance. On examining the tongue, it invariably presented the peculiar appearance noticed by most writers on scarlatina. Even in the mildest cases the tongue was covered with a white fur, with the elongated papillæ projecting above it. These papillæ were generally of a vivid scarlet hue, and appeared as though the apex of each one had been removed by a

pair of bone-nippers, or some such instrument, which gave them a truncated form. In the anginose, and more violent forms, this peculiar appearance was more striking; the tongue was covered with a thicker and darker coat, while the elevated papillæ and its borders presented an intense scarlet hue. On examining the throat, the whole surface of the fauces will be found to present a streaked-red appearance, extending over the soft palate and uvula, and in some cases, as far back as can be seen. In some instances, the soft palate and uvula are relaxed; in others, the inflammation appears to be more confined to the tonsils, which are often so much swollen as to render deglutition almost impossible. In some instances no sloughs or ulcerations were observed; but a general inflammation of the mucous membrane lining the fauces, with a copious secretion of ropy, tenacious mucus, which impeded respiration and deglutition. In other instances extensive sloughs were thrown off from the eighth to the ninth day. The redness of the throat appeared more diffused and intense, and often the coat would scale from the tongue and leave its surface of a vivid scarlet hue, appearing as though the whole extent were studded with granulations. In some cases the ulcers were confined to the tonsils, from which there was a copious secretion of glairy, tenacious mucus, which was brought up with much difficulty. We have seen the whole interior of the mouth in some cases assume a dark or livid appearance; in these cases the breath was remarkably offensive. With regard to the state of the circulatory apparatus after the chill or chilly sensation has passed off, and the fever comes on, our observations accord with the following remarks of Dr. Dewees:—

“The reaction of the system being now completely developed, the pulse exhibits the character which belongs to the existing form of the disease—preternaturally frequent, quick, and active, though still moderate if the disease be *simple*. More frequent, irritated, and tense, if it be *anginose*—of greater frequency still, but not so full, resisting, and firm, if it be *malignant*. The temperature of the body, the thirst, the scurf on the tongue, are also graduated in the same way; each symptom increasing in intensity, according to the augmented violence of the case.”

The eruption presented considerable varieties in its appearance. In many cases, it was generally diffused over the entire surface of the body; in others, it appeared on different parts—thicker in some than in others. In the malignant form, it was seldom developed distinctly; it had more the appearance of large patches, of a purplish or red hue, apparently rough. These patches were well-defined on the cheeks. In fact, in these cases, the eruption never had the appearance of being completely developed. The temperature of the

surface was, invariably, above the ordinary standard in fever. When the eruption commenced declining, the patients were annoyed by the most violent itching. In small children this symptom was tormenting, as they were kept continually scratching. A desquamation of the cuticle, on a decline of the eruption, was observed in a majority of cases. The disease, as it appeared among us, was decidedly of the inflammatory type. Even when the typhoid symptoms, as they are termed, came on early in the malignant form, still the preceding inflammatory action was proportionably high. Although the pulse may not be so resisting and firm as in the anginese form, yet it is evident that the circulatory apparatus is rather embarrassed in its operations, and not suffering from debility. A determination to the brain was frequent, and most of the fatal cases terminated in coma, with either a torpid state of the bowels or colliquative diarrhœa, and a copious eructation of gas from the stomach. In many cases of the simple and anginose form, costiveness was not an unfrequent symptom, and, in fact it was often remarkably obstinate throughout the whole course of the disease. Swelling and suppuration of the glands about the neck were frequent. Dropsical effusions also occurred in many cases; when this took place in the ventricles of the brain it was generally fatal. It is from this cause we may account for many of the sudden cases of death, where the patient presented every appearance of being in a fair way to recovery. These instances of a dropsical tendency were regulated, we think, very much by the course of treatment adopted; but more of this when we come to that part of our subject relating to blood-letting.

As to the cause of the disease, properly speaking, its contagious or non-contagious nature, we can add nothing from our own experience to what has been already said, that would be calculated to throw any additional light on the subject. The evidences on this point are conflicting, and after what has been written on the subjects of contagion and epidemics, it would be mere repetition to say any thing in this place. It is a point which will, perhaps, remain forever unsettled in the minds of some practitioners. It evidently prevailed in this city as an epidemic, although many facts could be brought forward that would go far to establish the doctrine of partial or contingent contagion. Some think it both epidemic and contagious, and others again regard it as infectious.

The disease, although most prevalent and fatal among children, was not confined exclusively to them; we observed several cases in persons from forty to fifty years of age, and one case in an old negro woman of sixty. It was also generally severe with persons

of this class, particularly among those whose viscera were disordered from the habitual use of ardent spirits. Persons of this character were almost invariably taken off by fatal congestions of the abdominal viscera or brain. Several cases also occurred in infants at the breast, but it was generally very mild, with scarcely any fever. That class among whom it was most fatal, were children from three to fifteen years of age. In many of these cases it appeared to be complicated with worms. We think it probable that this only occurred in cases where the irritation was extended to the mucous membrane of the alimentary canal; thus the worms acted as an additional irritant, and served to impress upon the disease a degree of complication and malignancy which would not otherwise have occurred.

We observed no cases of second attack in the same individual, although we heard of several. May not the sequelæ of the disease, which sometimes come on suddenly after the patient is to all appearances well, be mistaken for a second attack? There was one case that came under our notice, in which there was a second eruption after the first had desquamated, and the child to all appearances perfectly well; yet from its character we could not regard it as a second attack. It differed from the first in appearing to be seated entirely beneath the cuticle, without the slightest elevation of the papillæ or any portion of the skin. The entire body and extremities were covered with it. It remained out twenty-four hours, and then left the patient, having been accompanied with no further symptoms of disease.

Writers differ in opinion relative to the pathology of the disease under consideration. Some regard it as an essential fever, terminating by an eruption or angina; others as sympathetic of angina. There can be no doubt that the soreness of the throat and fever do take place in many cases without the eruption. We have never observed, on the contrary, that the eruption or fever appeared without the throat and tongue having previously exhibited some evidences of a derangement of its mucous membrane. This may not be observed in all cases, but it is merely because the patient is not always seen by the practitioner at the onset of the disease. There may not be the slightest febrile action, yet we can always detect, on examination of the tongue and fauces, the appearances peculiar to these parts in this disease, particularly the elevated papillæ of the tongue appearing above the white fur. Hence we think the definition of *scarlatina simplex* incorrect, when it is said to consist in "a simple constitutional disease, without any morbid affection of the throat." In one or two cases of children running about the house, where we had patients

labouring under scarlet fever, on examination of the tongue and fauces, we observed the peculiar appearances above-mentioned, two or three days before any febrile symptoms were manifested. These circumstances, taken in connexion with the ratio symptomatum of the disease, can leave no doubt as to the first link in the chain of morbid derangement. In almost every case, we shall find that in proportion to the degree of this primitive derangement, will be the violence of the general disorder of the system. We regard the progress of this disease as additional evidence of the correctness of the following pathological principles of BROUSSAIS.

“In every instance irritation is always identical in its nature. In whatever part of the organization it may be seated, whatever causes may have brought it into action, or the number of sympathies which it develops, it is always characterized by an afflux of fluids. It always commences in a single organic system, and is afterwards communicated to others. It is primitively local, and never changes its nature in migrating from one part to another, but can always be reduced to an augmentation of the phenomena which are the evidences of vitality.”

In this manner we may account for the complications so frequently met with in this disease; for the propagation of the irritation from the throat to those viscera, the derangement of which always endanger life. Many object to the doctrine of irritation, as being too simple. On examination, however, we shall find that this is one of its most commendable features. Truth is simplicity itself—nature in her most lovely garb. Let us examine the works of creation, according to the fundamental laws of philosophy, and what is there more simple and easy of comprehension! Take away from us these fundamental principles, and what appears to us more vague, mysterious and complicated! Let us then examine the disorders of the human frame on philosophical principles, and the nearer we approach to truth, the more certain and simple will be our management of its diseases. While the various sciences are every day yielding their beautiful laws to the experiments of the philosopher, why should medicine slumber in uncertainty and quackery? But the foundation of a more correct system of observation has been laid.

“Already has the road been chalked out, which is to lead to this important consummation. Already has a light broken through the horizon, to light us on to victory and success; and the clouds of error are fast dispersing before the all-illuminating influence of truth, while the car of medicine enriched with the inestimable treasures of physiology and pathology rolls on, majestically making constant accessions to human happiness, and securing new triumphs over human misery.”

Having taken a cursory view of the symptoms and pathology of the disease, we will now pass to the subject of its treatment.

In the mild form of the disease, little medical aid will be necessary. Rest, low diet, mucilaginous drinks, and keeping the bowels in a soluble state, will generally be sufficient. These cases seldom come under the immediate notice of the physician. But when the disease assumes the second or third form, no time should be lost, immediate recourse should be had to those remedies which experience has shown to be the most effectual in checking its progress.

In the anginose form, we have found an emetic to be the best mode of commencing the treatment. Many objections have been urged against this remedy, but the weight of authority, as well as experience, are in favour of the use of emetics in this disease. We generally prescribe ipecac. and tartar emetic in combination, and encourage the vomiting by means of copious draughts of tepid water. We have invariably found the vomiting to have a most decided effect in checking the inflammation of the fauces, and reducing the general febrile action, particularly the pungent heat of the surface. Some object to the emetic in consequence of its irritating effects on the stomach. We are as decided in our objections to emetics, in cases where the stomach is the point whence the irritation is radiated, as any one can be. In what is generally termed bilious fever, where the irritation is concentrated on the mucous membrane of the stomach and duodenum, they are evidently injurious, and should be proscribed. But experience is in favour of their use in scarlet fever, and it is not contrary to reason. Thus, we must remember that "experience is blind if unenlightened by reason, and reason too vague and uncertain unless it be based upon experience." Others again object to their use, in consequence of their tendency to produce prostration; and particularly those who consider this disease to be of a typhoid character. This objection we think unfounded. In croup, for instance, there is great apparent feebleness of the circulation, and evident prostration of the muscular energy, yet we find that nothing is so effectual in subduing the anginose symptoms, and restoring the centrifugal action of the circulation, as an emetic carried to copious vomiting. The typhoid symptoms are consecutive to the inflammation of the fauces, and in proportion to the severity of the local irritation; consequently, a remedy which will subdue or arrest the progress of the local affection, must be efficacious in preventing the typhoid stage. Experience has amply shown that emetics are among the best remedies we have against the anginose affections. In the

disease in question, they not only exercise an important influence over the general circulation, but also effectually cleanse from the throat that tenacious mucus which is peculiar to this affection, and which contributes in no small degree to aggravate the irritation of the fauces.

When we speak of the use of emetics in scarlatina, we allude to the onset of the disease—before the sympathies, which the local irritation will bring into action, have implicated other organs, in which case they might be injurious. They should be administered when the inflammation of the throat predominates, at which time there will be no danger from their action on other organs. In this case we stifle the irritation in the bud—meet it in its primitive position, and prevent or lessen the development of those sympathetic actions, through which alone the whole organization can be implicated, for observes Broussais, “irritation, acting on one point of the organization, is repeated afterwards in other points through the medium of the nerves, and this action is what is termed sympathy.”

The great danger of this disease arises from the formation of visceral congestions. When proper depletion has been neglected in the first stage of the affection, a determination to the brain, or some of the abdominal viscera, will, most assuredly, take place. It is from these complications that the great fatality in this disease arises. Dr. ARMSTRONG is of the opinion, that these consecutive lesions are, in a majority of cases, the immediate causes of death. Under these circumstances, we do not hesitate to pronounce blood-letting to be proper, and, in many cases, absolutely necessary at the onset of the attack. But here again we are met with the old objections of typhus and debility; they are held up to us in all their terrors by the opponents of blood-letting. Let us throw aside these names, or, merely regarding them as symptoms, endeavour to refer them to the structural derangements whence they arise; by this course of analysis, we shall regard the disease in its true light, and not suffer its nature to be represented by a single symptom, which will inevitably lead to a practical blunder. The disease consists, primitively, in an acute and rapid inflammation of the mucous membrane of the mouth and fauces. This inflammation is liable to be radiated, if I may use the expression, to other important organs, and in proportion to the severity of the primitive derangement, will be the danger to be apprehended from the consecutive lesions. How, then, are we to ward off this typhoid stage? shall we commence by anticipating the debility, and throw in stimulants to fortify the system? Nothing will



more certainly frustrate our design, and secure to our enemy a triumphant victory. This debility is merely apparent, and, for the support of the assertion, we refer you to the following well-established principles.

"Excitation," says Broussais, "is never uniform throughout the system; when it exists in a greater degree in one organ, it is in a less in another, and accumulates in one tissue by abandoning some other."

Again—

"The augmentation of the vitality of one or more organs, always leads to the debility of some others."

And again—

"Consecutive debility is not a disease, but is connected with irritation—being produced by it, and continuing or ceasing with it."

The apparent debility and typhoid appearances observed in the disease under consideration, arise in consequence of the irritation being radiated from the throat, and concentrated on some one of the vital organs. In this case, the excitability or vitality of the organs are elevated to such a degree, that a proportionable debility of others is the inevitable consequence. It is true, we should not bleed from the general circulation after congestions have actually taken place—where the deadly and fatal coma has but too surely revealed to us the true situation of our patient. The golden moment has been suffered to pass by unimproved, and we must now trust to revulsives and counter-irritants. In the treatment of this affection, the first twelve or twenty-four hours is every thing. We must lay the axe at the root of the evil. Our first blow must be a decided one. Of course, the constitution and temperament of our patient must have some influence over the application of this remedy. To say that blood-letting is proper or necessary in all cases, would be equally wrong and dangerous as to prescribe its use under any circumstances. But when we have come to the conclusion, from the nature of the existing symptoms, that it is necessary, we should bleed until a decided impressiun is produced upon the system, even if it should be necessary to carry it *ad deliquium animi*. We used the lancet freely in a majority of the cases that came under our care, and were never disappointed in our expectations. The delirium and determination to the head was relieved, the restlessness quieted, and visceral congestions prevented. We also found that the dropsical effusions and swelling of the glands of the neck, were less frequent in the cases treated by venesection than those in which it was not used. It is to be feared, that those who are so loud in their denunciations against blood-letting, have not employ-

ed it sufficiently early in the disease. This is a most important point. Prescribed too late, there can be no doubt of the injurious effects of blood-letting; but employed at the onset of the attack, its power in controlling the march of inflammation is almost omnipotent.

It will generally be found requisite to administer a cathartic after blood-letting has been employed, or where the treatment has been commenced without it. We find costiveness, and sometimes obstinate constipation, to be a frequent occurrence; and when we reflect on the great degree of irritation and restlessness which are occasioned by the lower intestines being loaded with faecal matter, we must be convinced of the necessity of cathartic medicines to remove the difficulty. But we must be careful that the remedies employed for this purpose be not too irritating, as they will leave the mucous membrane, which they have relieved of a load of irritation, in a worse condition than it was before. Enemata will not be sufficient alone to fulfil this indication; they may relieve the rectum of the faeces, but there is a certain condition of the mucous membrane caused by the irritation which requires something more active. We generally administer from five to ten grains of calomel, to be followed in a few hours by a full dose of castor oil. After the bowels have been relieved by this medicine, we maintain them in a soluble state by the daily administration of enemata; and unless the costiveness should become obstinate again, we never resort to any thing more than simple castor oil. We are aware that the advocates of what has been termed "physiological medicine," have been accused of giving currency to a system calculated to render our practice inert and inefficient, by banishing from the list of our remedies all the most potent medicines. This, we are satisfied, has arisen from misrepresentation. Because we deprecate the *abuse* of emetics and cathartics, we are accused of wishing to blot these remedies from the *materia medica*. Because we have cried out against the horrid effects of an indiscriminate use of calomel, and those who prescribe it in an empirical manner, our opponents say, that we wish to proscribe the use of the very Samson of the *materia medica*. These misconstructions and misrepresentations are but the fruits of ignorance and prejudice. We are not opposed to the use of calomel when prescribed in a judicious manner. Our objections are only against the abuse of this important article. We would but rescue it from the oblivion into which its professed friends are fast hastening it. In every case of irritation of the mucous membrane there is more or less congestion of the capillary vessels; and we must readily see how cathartics may act beneficially under such circumstances. This is the very

condition of the mucous membrane of the alimentary canal, in which we have recommended the use of calomel and oil. The accumulated *scæces* here act as an additional source of irritation; the irritation of the disease is extended to the rectal as well as genital mucous membrane, and a cathartic administered as directed above will never fail to procure manifest relief. The first evacuations after the medicine has been administered will be found to exhale a most intolerable *scætor*, and not unfrequently it will be necessary to burn sugar or vinegar to remove the offensive odour from the apartment of the patient. Thus we administer calomel to procure a definite result, and not to cruise through the liver and portal circulation after *black bile*, or imaginary demons, whose peculiar residence and hiding place is supposed to be in this innocent organ.

It is necessary in this disease, as it is in all others arising from irritation, to pay strict attention to the diet of the patient. During the period of excitement all articles of a stimulating nature should be proscribed. Officiousness on the part of nurses, and those who are fond of giving advice in such cases, has been the occasion of the fatal termination of many cases. It is of as much importance, if not more, that the physician should be obeyed with regard to the diet of the patient, as it is that his prescriptions should be faithfully complied with. The propriety of such a course must be so obvious to every reflecting individual, that we will say no more. Flaxseed tea acidulated with lemon-juice will form an excellent drink. In fact, any mild mucilaginous fluid will answer every purpose, provided it be not offensive to the stomach of the patient. We have no objections to the use of sago or baum tea. We have been in the habit of allowing cold lemonade in all cases, without the slightest injury to our patients. When the force of the disease is subdued, and the patient begins to mend, we must gradually increase the diet in proportion to the restoration of the digestive powers. After having confined the patient to an absolute diet during the period of high excitement, we may then commence with arrow-root and the different articles of the same nature.

We have never resorted to sponging with cold water, or cold affusions, for the purpose of relieving the intense heat of the surface, and therefore can say nothing as to their efficacy. We have found the warm bath useful in many cases in which the eruption had suddenly seceded; also in cases complicated with convulsions. We think it not only unnecessary, but highly injurious, to confine the patient to a feather bed, and load him with covering, for the purpose of warding off the effects of cold. He should not be exposed to a current of

air; but he must be lightly covered, and confined to a mattress instead of a feather bed. This we think of much importance.

For the swelling of the glands about the neck we use the common poultice of baker's bread and milk. Under this treatment we have not had a single case in which the glands suppurated. We are also in the habit of applying this poultice to the throat when the fauces are much swollen and painful; it should be renewed as soon as it becomes cold. We think these external applications to the throat have had a better effect than all the gargles that have been prescribed. Many persons will not be satisfied, unless they are permitted to use a gargle of some sort, and therefore to prevent them from doing something that would aggravate the disease, we generally permit the use of such as are not likely to be injurious.

When the disease assumes what is termed the typhoid type, the treatment must be directed against the local congestions and determinations. The principles which should guide us here, do not differ from those in similar cases. The only sure security against this fatal termination, is the judicious and prompt treatment of the disease at the onset. As we observed above, the first twelve or twenty-four hours is every thing. Arrest the disease at the onset, and it will be easily managed afterwards. There is no question, that the dropsical effusions may be prevented, in a great measure, by timely and effectual sanguinary depletion. Dr. Dewees observes, "we are inclined to believe, that this affection arises from the accompanying inflammation not having been properly subdued by early depleting remedies," consequently the dropsical effusions, arising from chronic irritation or inflammation, must be treated accordingly.

*Augusta, Georgia, May, 1833.*

---

ART. IX. *A Case of Ossification of the Muscular Tissue.* By DAVID L. ROGERS, M. D., Lecturer on Surgery in New York. [Communicated by S. R. KIRBY, M. D.]

IN June, 1832, Dr. R. was first consulted in the case of James Mulwill, aged thirteen years. His father stated that his son, from his infancy, had been in good health, and was remarkable for animation and a high flow of spirits. About six months ago, it was perceived that his health began gradually to fail, and without any perceptible cause. At first, a loss of motion in the arms was noticed;