A TREATISE

ON THE

HISTORY, ETIOLOGY AND PROPHYLAXIS

OF

TRISMUS NASCENTIUM,

BY

JOHN M. WATSON, M. D.,

Professor of Obstetrics and the Diseases of Women and Children in the Medical Department of the University of Nashville.

SECOND EDITION.

NASHVILLE, TEN.
JOHN T. S. FALL, BOOK AND JOB PR—BEN FRANKLIN OFFICE, COLLEGE ST.

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This great outlet of infantile life has not received that notice and investigation from our best writers, which its great importance so justly merits:—some, passing it by in reprihensible silence, have written copiously enough on other opprobia medicorum, while others have given us only a few formal pages or paragraphs on a subject which required at their hands a most elaborate treatise. All that has been published about this fatal malady, is, for the most part, well calculated to embarrass and disappoint the reader—leaving him uninformed of its history, in doubt about its etiology, and uninstructed in a reliable prophylaxis—not remedy, for there is none!

Moschion, who wrote a manual of midwifery about the end of the first century, entertained an opinion vaguely correct in regard to the exciting cause of this disease; so did Levret. They thought that the stagnant blood in the umbilical cord might produce dangerous disease; probably they had seen this malady consequent upon inflammation and irritation of the navel. M. Bajon also concurred in this opinion, distinctly regarding a pathological condition of the umbilicus as the cause of this affection—a view which Dr. Colles has very nearly confirmed by his dissections and observations. It has, however, been attributed to very different causes by Evans, Bartram, Clark, Underwood, Labatt and others.—Hence, we meet with a great contrariety of opinion, as ex-

pressed by those writers—all disagreeing in their etiological expositions, indeed, so much so, as greatly to impair our confidence in their writings.

Dr. Cullen, a copious writer on other subjects, has treated the one under consideration with great brevity; conscious of his apparent neglect, he says apologetically:—"It is a disease that has been almost constantly fatal, and this, also, commonly in the course of a few days. The women are so much persuaded of its inevitable fatality, that they seldom or ever call for the assistance of our art. This has occasioned our being little acquainted with the history of the disease, or with the effects of remedies in it." But this is not the secret; physicians had seen this disease often enough, but did not understand it; they had also treated it, but had not cured it; had sought out its cause and pathology, but had not found them; hence, forsooth, so many writers have avoided the great difficulties involved in its obscure history, controverted etiology, unknown pathology and intractable course. Colley, Condie, Churchhill, and others, though greatly skilled in eclecticism, have gathered but little valuable or satisfactory information from the writings of others on this subject. Journalists, knowing that systematic writers have failed to account for the phenomena of this disease, and being unrestrained by any known facts, have propagated, and vainly attempted, by reporting cases, to prove, many fanciful and untenable conjectures. To a particular instance of this kind, I will now refer:—

Dr. J. Marion Sims, of Montgomery, Ala., has published in the Medical Journal of the Medical Sciences some interesting "Observations on Trismus Nascentium, with cases illustrating its etiology and treatment." From all of which he deduces the following strange and unwarrantable conclusions: "That Trismus Nascentium is a disease of centric origin, depending upon a mechanical pressure, exerted on the medulla oblongata and its nerves; that this pressure is the result, most generally, of an inward displacement of the occipital bone, often very perceptible, but sometimes so slight as to be detected with difficulty; that this displaced condition

of the occiput is one of the fixed physiological laws of the parturient state; that when it persists for any length of time after birth, it becomes a pathological condition, capable of producing all the symptoms of Trismus Nascentium, which are instantly relieved simply by rectifying this abnormal displacement, and thereby removing the pressure from the base of the brain."

I have made this lengthy quotation in justice to Dr. Sims, as I intend to make some critical remarks on his observations, cases and conclusions. I will endeavor to do this fairly at least, yet faithfully. His strange views, wonderful practice, and doubtful cases, require a very rigid examination; which, when fairly and faithfully made, may seem a little severe; therefore, I will here remark, that nothing like wantom severity is intended; on the contrary, I am ready to acknowledge his merits as an independent thinker and actor, by which, great difficulties have sometimes been overcome, at other times signal failures have ensued The latter sequence has followed in the present instance. The Doctor has failed in his commendable enterprise; but his failure is a splendid one! Had he succeeded in directing one ray of light into the deep, dark *plasis* of this mortifer morbus, he would have merited the everlasting gratitude of the profession. Signal as his failure has been, judging from his writings, he does not seem to be conscious of it; but on the contrary, contends that he has succeeded in finding out the etiology of this disease, and for it, also a remedy! The occasional displacement of the cranial bones is a subject to which the attention of practitioners of medicine should be directed; but while we feel under great obligations to Dr. Sims for calling our attention to this source of disease, we are far from admitting that it is ever a cause of Trismus, be it the source of whatever other affections it may.

The Doctor has investigated this subject according to the following "fixed ideas:"—1. Dorsal decubitus; 2. Occipital depression; 3. Trismus Nascentium; 4. Change of position; 5. Recovery. These five things always obtain in the mind of Dr. S. whether they do in his patients or not; when, for

instance, they cannot be seen by other physicians, he seems to recognize them none the less clearly as we shall discover presently.

His case the II presents the following particulars:—The patient had been ill of Trismus Nascentium two days—the attending physician had declared that the disease was inflammation of the brain, and that death was inevitable—there were frequent spasms—mouth closed tightly—swallowing impossible—the back of the head sunk in. A change of position was made, which in four hours gave relief, and in eighteen hours cured the disease! All this was done, too without the aid of homœpathy, hydropathy, or mysticism of any kind. O pathetism, where wert thou!

In this case the depressed occiput was relieved by a mere change of position, and the patient cured in eighteen hours. How shall we reconcile these statements? A case of Trismus Nascentium, presenting the foregoing array of symptoms, of two days continuance—the patient just ready to die, and then cured by a mere change of position in eighteen hours!

To the credit of Dr. Sims I will here state that this case was obtained from a non-medical correspondent; although he has endorsed it, yet I am willing he should have all the benefit of the foregoing fact.

The very next case, however, is both marvelous and inconsistent, although reported by the Doctor himself:—The child "was born trismal," had had the disease thirty-six hours when seen by him, then by *his* magic change of position was cured in two hours!

His statements in case the IV, in regard to the symptom of the child's inability to suck, do not accord with my own observations. "This inability to suck," says he, "is pathognomonic of the disease." This symptom does not always exist in the tetanus of children, especially in that variety termed chronic: this inability to swallow may be absent just as it is sometimes in the tetanus of adults. I have seen fatal cases of infantile tetanus, when the symptom of trismus did not obtain—there was rather a disinclination than an inabil-

ity to suck. But if he supposes that the mere symptom of trismus constitutes the whole of the disease, then is he correct in saying that "an inability to suck is pathognomonic of the disease." Let his views be what they may in this respect, there would be no less impropriety in saying that the varieties of the opisthotonos and emprosthotonos are not tetanus in the strict sense of that term, than to conclude that trismus, another variety, is not. This reminds me of Dr. Cullin's acknowledgment:—"I have in my nosology put the trismus or locked jaw, as a genus distinct from the tetanus; all this, however, I now judge to be improper, and am of opinion, that all the general terms mentioned denote and are only applicable to different degrees of one and the same disease." Surely trismus in the infant or adult, is a mere variety of tetanus, and like the other varieties depends upon a pathological condition of some of the cerebro-spinal centres.

It is a great misfortune that the term trismus nascentium was ever adopted; tetanus nascentium would have been a better, though a less euphonious one. There was no greater necessity for changing the name of this disease in the case of infants than there is to change that of pneumonia, dysentery, or colic, when they attack children. We had just as well term tetanus, trismus adultorum, trismus virorum, or trismus feminarum, as to call it trismus nascentium. In the employment of these terms, that of *tetanus* would be kept too much in the back ground, as it really has been, by the use of the term trismus nascentium. Like Dr. Sims, we may loose sight of the true character of a tetano—pathological condition of some portion of the cerebro-spinal column, which in every instance is the proximate cause of the disease; and which cannot be relieved in a moment in any instance, and often not at all, by a mere removal of the exciting cause. This every careful observer knows; but more of this presently.

I will now examine case the V, being the most remarkable the Doctor ever saw. This case was reported in part by a Dr. Vickers, though seen and commented on by Dr. S. himself. The child was 4 or 5 months old—had been sick all its

life—the occipital bone was shoved in to an almost incredible extent—it had trismal symptoms, according to his estimation of them, which were completely under the control of the Doctors; they were relieved and reproduced at pleasure by simply rectifying and displacing the occiput. This was done according to Dr. Sims' previous proposition, "That the symptoms of Trismus Nascentium are instantly relieved by symply rectifying the abnormal displacement of the occipital bone." This is one of his propositions deduced from his cases and observations, and put down in his treatise in all due form.

Who except Dr. Sims could thus have hooked the Leviathan, and led the monster to and fro with such trismal docility!—No one, alas! Surely he had only the pliant dolphin clonus with which to deal, and not the crooked serpent tetanus. That alternate displacement and replacement of the occiput should suspend and reproduce some particular forms of paralysis, or nervous affections, I am prepared to admit; but that trismus, after being established for days, or even hours, should be thus dealt with, is more than any physician who clearly distinguishes this disease from other nervous disorders, can allow, in my humble judgment. The symptoms of trismus may be excited—not cured—by rubbing the epigastrium, which I have myself often done in obscure cases, to develope the symptoms more fully; afterwards there would be a reduction of the former symptoms, from the expenditure of nervous excitability. The same occurred also, I presume, in the Doctor's cases of nervous disorders, by raising and depressing the cranial bones.

I shall not follow Dr. Sims through his trismoid cases, as he terms them; those already mentioned are surely tris*moid* enough, in that diminutive sense, so much so indeed that even such a term is too strong for them. Besides, I did not intend to review his writings in a regular way, yet there are a few things connected with these trismoid cases, which I will notice.

Dr. S. has reported but one case of cadaveric autopsy, and strange to relate, this does not contain a single word

about lesion of the brain or meninges, from a long continued displacement of the cranial bones—only that the "brain was perfectly bloodless"—no signs of previous congestion, irritation or inflammation.

When the Doctor could not make out a case of dorsal decubitus and depression of the occipital bone, still clinging to his fixed idea, or cherished theory, he learned that the child had been nursed on its side, and that lateral, or rather diagonal decubitus had produced a depression of a pariental bone, and laying hold of this opportune succedaneum, he maintains his views with as much confidence as before.

If any thing was still wanting to show that Dr. S. does not appreciate the danger and mortality of this dreadful disease, I might advert to his notions about the operation of laryngotomy affording relief until it could be cured. I will not, however, detain the reader longer with any further critical remarks on this subject, but advise him to read the treatise for himself, which he may find in the American Journal of the Medical Sciences, in April number 1846, and in July and October numbers of 1848. If any further apology be necessary for these strictures it may be found in the remark, that Dr. S's. theory, cases and treatment are all well calculated to mislead the inexperienced and divert their minds from the true sources of tetanus, and also from the only means by which infants can be protected against an often occuring and incurable malady.

I will now take my leave of the Doctor in the words of Petrarch: "Raro magni errores nisi ex magnis ingeniis prodiere."

Etiology.—The causes of Trismus Nascentium with their attendant difficulties, like every thing else pertaining to this perplexing malady, have been very much neglected; indeed, I am not aware that any writer has arranged them according to their proper relation to each other, or their usual division in other diseases. Its predisponent, exciting, and proximate causes have often been confounded with each other—one writer mistaking the predisponent for the exciting cause, and

another, the latter for the former. It will be readily conceded that these causes occasionally change their relation to each other, but this is very different from confounding them with each other in particular instances. While treating this subject according to the foregoing division, I shall have occasionally to introduce other causes in their proper places, such as accidental, accessory &c.

It will be necessary to make a clear distinction between the predisponent cause and the habit of body or diathesis, which constitutes the predisposition itself. Two persons, for instance, may be exposed to the same predisponent causes, and in one a predisposition to a particular disease may be produced by the yielding susceptibilities of his system, and be resisted by the opposing energies of the other; or the same person may be affected by such causes at one period and escape their influences at another. Again, a predisposition to a disease may exist as a connate diathesis.—Then let a predisposition to tetanus be the effect of whatever predisponent causes it may, it must be regarded as a *pathological state;* which, though occult and unappreciable by any pathognomonic symptoms, yet it is doubtless a tetanic element, capable of being developed by an exciting cause into plain, open, unmistakable symptoms of lock jaw, or of being subdued by a proper prophylaxis, which consists mainly in a protection from exciting causes. The agency of an exciting cause, however potent and active it may be, fails to produce the disease, when there is no existing predisposition, as may be illustrated by the following examples: Two persons of the same age, sex temperament and habits, breathing the same atmosphere, receive similar wounds in corresponding situations; one is attacked with tetanus, and the other escapes;—or an individual receives a very bad wound and escapes lock jaw, and is afterwards attacked with it from a very slight wound. Such instances certainly show that the disease does not depend alone on an exciting cause. Again, the terminal points of wounded nerves may pass into a tetano-pathological condition in a slight wound, and not in a far greater one, and vice versa. So, it is not the situation or

size of a wound which determines an attack of this disease, but a peculiar occult state of the general system. This condition may not, however, amount to a direct tetanic tendency, but may be only a mere vitiation of the system that may interfere with the healthy healing of the wound, or the formation of a sound cicatrix; for the simple healing over of a wound does not afford protection from an attack of this fatal malady, neither in infants nor adults. Then, any thing which impairs health in manhood or infancy may, in this general way act as a predisponent cause of tetanus; but, there are some particular causes which evidently exert a more direct predisposing influence, such as cold, impure air, a damp, cold atmosphere, indigestion and high solar heat. And why may not malaria, itself, the frequent and great source of so many maladies, impress the system with a strong tetanic predisposition, by producing cerebro-spinal irritation, or irritation of some of the other great ganglionic nervous centres. This opinion is confirmed by the fact of Trismus having occurred so frequently in foul and badly ventilated lying-in hospitals, and its occurrence having been prevented by improvements for ventilation and cleanliness in such institutions, as, for instance, in the Dublin lying-in hospital. Dr. Joseph Clarke's account of this institution, in reference to the foregoing, is conclusive on this subject.

The exciting cause of Tetanus Nascentium.—A traumatico-tetanic condition of the umbilicus is, with very few exceptions, the constant exciting cause of this disease. This part of my subject I shall now discuss at great length as it is paramount in importance to all others, in a practical point of view. The analogy between traumatic tetanus, as it occurs in the adult and infant, is both striking and instructive, and well deserves our most particular consideration. In the adult, this disease generally comes on about the 8th or 9th day after the reception of a wound, and in the infant, it attacks so frequently on the 9th day after the cutting of the funis, that it has been termed "nine-day fits." That portion of the cord which, after its division is left in connection with the navel, is as liable to degenerate into an ex-

citing cause of tetanus in the infant, as is a common wound in the adult. The beautiful physiological process of desiccation, contraction and separation of the cord so seldom occurs that it has been disregarded by many eminent writers. Even the great Baron Albert Von Haller says:—"Funiculi quidem ombilicalis particula quam obstetrics solent cum abdomine parvuli conjunctam relinquere abit in sphacelam, quassi ambusta et post biduum, triduumve dilabitur." This is certainly a good *pathological*, though by no means a physiological description of the separation of the funis—a traumatic state of things however, which frequently occurs. This oversight has been committed also by other distinguished writers, namely Chaussier, Beclard, Orfila, Capuron, and Dennis.

C. M. Billard's explanation of the separation of the funis is quite satisfactory. He very properly maintains that "the desiccation of the cord is altogether a physiological phenomenon, belonging to the assemblage of vital phenomena, and entirely dependent on them. That part of the cord attached to the placenta does not exhibit the phenomenon of desiccation, like the portion remaining with the child, but shrinks and decays like a dead substance, whilst the abdominal portion is not so affected. Here the desiccation ceases as soon as life is extinct; it either does not proceed in still-born children, or is considerably retarded. In place of drying and separating at the end of a few days, as is observed during life, the cord undergoes in the dead body a perfect decomposition, differing entirely from its normal desiccation." He further contends that the umbilical cord may, under favorable circumstances, separate from the navel, just as the stem of a cucurbitaceous fruit is separated, or by what he terms "a proper suppuration." Of 86 infants examined by him, 19 had redness and tumefaction of the umbilicus, without suppuration. The period of the detachment of the cord varies from the 2d to the 7th day.

The infrequency of the healthy normal separation of the funis has not only been greatly overlooked by writers, but shows likewise how very liable infants are to irritation, in-

flammation and sloughing of that portion of it which is left at birth attached to the abdomen. This degeneration of a healthy vital action into a morbid, abnormal one, is easily induced by a great variety of causes, to all of which some children are more exposed than others, and among such tetanus is of far more frequent occurrence. These common causes among the blacks are bad dressings of the umbilicus, improper handling of the infant, wet and soiled dressings, which become alternately wet and dry for several days; to which may be added unsuitable applications to the navel itself after the detachment of the cord, that are more calculated to irritate and inflame the part, and in that way to provoke lock jaw, than to soothe, heal and prevent its supervention.

As there is a much greater difference in the management, comforts and habits between white and black women after their confinement, than in their parturition, the causes which operate on the children of the latter, in occasioning a greater frequency of this disease among them, must occur after birth; besides it is well known that negro women generally have safer and easier labors than white women, as a consequence of their active, laborious habits. Hence, neither the imaginary concussion of the spine during delivery, nor the vaunted displacement of the occipital bone consequent upon dorsal decubitus, does account for the very great amount of numerical difference between the attacks of white and colored children. This difference must be occasioned by some particular causes, both predisponent and exciting, very different from those to which I have just adverted.

I will now present an arrangement of facts, from which an opinion of the utmost practical importance may be deduced, in regard to the exciting cause of this disease—an opinion which when entertained must exert a salutary influence in checking the dreadful outbreaking of this intractable morbus. That this opinion may be embraced and have its proper practical influence, is one of the chief objects of the writer in contending for it so earnestly; which is done

not merely to confirm the fact as he believes, that a diseased umbilicus is the cause of infantile tetanus, but that a safe and easy prophylaxis may be established on a reliable basis, not to be overturned by a constant failure of the remedy in the hands of others, as has unfortunately been the case with most of those means prescribed by others in accordance with their peculiar theories. There is, however, one just exception to this remark, which deserves to be mentioned:—Dr. Joseph Clark and others regarding badly ventilated lying-in hospitals, with their bad air and filthy apartments as causes of this malady, have done much good by their accordant prophylactic directions. For, although they mistook the predisponent for the exciting cause, yet by directing that such causes should be avoided and corrected, the exciting cause, which is now so zealously contended for, though present and active in many instances, was in others greatly deprived of its tetanic influence.

That the Exciting Cause of this disease may be plainly seen and *practically* regarded, I will now set in order a number of facts, both in their proper relation to each other and their general bearing on its controverted points. From these, surely, a safe and useful conclusion may be easily deduced. By an arrangement of even dim lights in a proper manner, we may discern an object which could not otherwise be seen by them, so in the present instance by a proper collation of facts we may obtain a more correct view of the exciting cause of tetanus nascentium.

The infant is no sooner born than it becomes a *traumatias*, a trauma must of necessity be inflicted on its umbilical cord; a wound on a part which is, as has already been shown in the first part of this treatise, so very prone to pass into a pathological condition, and thereby excite irritation and inflammation of the umbilicus, that many eminent writers have overlooked its physiological exceptions. With the brute mammalia, this artificial division of the cord is unnecessary, as theirs break according to an appropriate physical state; then dry, contract and fall off without producing inflammation of their navels. Hence, though a species

of the equus genus of animals is, as is well known, very liable to tetanus from wounds and other causes, yet no one, I presume, ever saw their foals suffering from the disease; as the horse is thus man's *patho*-congener, might we not expect to see them attacked also occasionally with this disease? As adults and horses are, in this particular respect, pathologically congeneric, why should we suppose that their offspring are not so likewise? It is quite reasonable to believe that they are, and that the immunity of colts from the disease is not owing to any connate difference of that kind, but to an exemption from its exciting cause—irritation and inflammation of their navels. The experiment of exciting artificial inflammation of the navels of the equinal young might shed some light on this subject. I will here remark that it is not contended that the bare wound on the part of the cord left attached to the child's abdomen, causes a pathological condition of that part, but that the state itself of the part is such as to admit of an easy perversion of its normal process of separation, in which particular, it differs very much from the navel strings of other animals. The infantile umbilical cord, is too strong to be thus safely broken, and too full of the gelatine of Wharton to dry, contract and fall off in the equinal way; it, therefore, requires some *rational* management. Really, it seems to have been designed by the Great Giver of mind, that the infant should not only receive instinctive, but likewise rational protection, at our hands. So, when their navel-strings are managed in a rational way, they will not induce irritation nor inflammation of the umbilicus. It is necessary then that the cord should be cut, and other appliances be employed, of which I shall treat more fully presently. I must, however repeat that the navels of children from bad management and other causes, often become inflamed, and it is a fact of no small consequence that negro children are far more liable, to a variety of accidental or accessory causes, which occasion irritation and inflammation of the umbilicus, and it is well known that they are also more liable to tetanus. This liability to trismus is in a very remarkable degree proportionate to the liability to inflammation

of the navel. So, in tracing out the exciting cause of this disease, it will be of great advantage to enquire very particularly into these accessory causes and their morbid influences on that part. By a proper examination and consideration of these advenient causes—nearly always occurring in the cases of negro infants—we may be able to answer the appropriate and important question, Why are the infants of our slaves more liable to tetanus than those of the whites? This is indeed a strong question and much in point; which when truthfully solved, its answer cannot be much short of a solution of the main problem. No one I presume will assume that the children of our negroes are more obnoxious to tetanus from a connate diathesis peculiar to the African race, than are the whites. An assumption of this kind may be refuted by stating the fact, that when the children of white parents, for instance, paupers, inmates of hospitals &c., are subjected to the accidental causes which I shall presently relate, they, like the children of the blacks, are equally liable to trismus; and moreover, when the latter are exempted from such things, they are no more obnoxious to the disease than the former. These facts are of too much importance to rest on mere assertion; they must, hence, be sustained, for they contribute no little to the elucidation of our subject.

I will now relate what must accord with the observations of most physicians who have done much practice among negroes. When called to see their children we find their clothes wet around their hips, and often up to their arm pits, with urine; smoking, fretting and kicking the child is thus presented to us; when on examination we find the umbilical dressings not only wet with urine, but soiled likewise with feces, freely giving off an offensive urinous and fecal odor, combined at times with a gangrenous fetor, arising from the decomposition—not desiccation—of the cord. May I not say, that a vital, physiological drying and separation of the funis under such circumstances is impossible; hence the frequency of a pathological condition of the umbilicus in such cases, and I will add, the frequent occurrence of lockjaw also among them. Moreover, these navel dressings are not only thus acted on

by the child's urine and feces, but they also become impregnated with a filthy, irritating moisture, constantly exuding from the sphacelated cord; there comes likewise an occasional intervening dry rough state of these foul deathful appliances, during which they rub, irritate and excoriate a surface already excited by those foul agencies just mentioned. Nor is this all. Negro children are often improperly fed, and suffer from colic, and abdominal distention, causing them to fret, cry and kick, thereby producing abdominal movements well calculated to bring its umbilical dressings in rough contact with their navels. Their mothers never think of changing these hurtful dressings; either from a want of changes, or a disinclination to do so, they let them remain on—bandage and all—until the funis *sloughs;* after this, the applications are almost as hurtful as those previously employed—such as soot, dry dirt out of the back of the chimney, scorched cotton, greasy cloth folded up into a hard compress, and a bandage drawn around these with unmerciful tightness. That there are many exceptions to this deplorable state of things, I readily admit; so I might add, there are many exceptions to attacks of tetanus; more indeed of the latter than the former, for every child that has a sore navel does not consequently have trismus. But more of this presently.

I have enquired very particularly of the overseers of large plantations with numerous slaves, about the management of their negro children, and in every instance where the mistress attended carefully to the dressing of the umbilicus, very few or no cases of trismus occurred. Mrs. P——t, a very motherly intelligent lady, informed me that she had raised about 20 little negroes, also a goodly number of her own children, and that none born on her place ever died of tetanus. She stated further that she always paid very strict attention to their navels, and in no instance trusted the management of them to their mothers. Now, it is worthy of remark that Dr. H. has a quarter in sight of the place just mentioned, on which 30 or 40 negroes constantly reside.—This plantation has been for more than 20 years under the management of overseers: one of them had the care of it

15 years, during which period only 2 children died of lockjaw; the next overseer was retained 4 years, during which time 4 children were attacked and died of this disease; the third superintendent remained 2 years, in which time two deaths occurred from infantile lockjaw. The wife of the first overseer was an excellent nurse and fully appreciated the danger of a sore navel. She paid careful attention to the navels of the little negroes, but her appropriate measures were sometimes defeated by the carelessness of their mothers, during her absence from their houses. Yet out of the great number of children born on this place in 15 years, only two died of sore navel or its sequence, trismus. The wife of the next overseer was young, inexperienced and had no turn for attending to little negroes, so 4 died while she was there; and the same may be said of the wife of the last mentioned superintendent, and the same result followed.

In the last 15 years Mr. B——h has had 15 colored infants born on his plantation, during which time, his mother, who was a midwife, resided on the same place, and paid great attention to the umbilical dressings, and not a single case of lockjaw occurred while she lived; she died a few years ago, and since her death but one negro child has been born on the place, and that died of sore navel and tetanus.

Mrs. H——e, a very intelligent and domestic lady has assured me that she has raised upwards of 20 little negroes on their plantation, and not one born on their place had ever been attacked with trismus—that she never in any case, trusted the navel of the child to the care of its mother, but always attended personally to its dressings. Mr. W——n, who owns a number of slaves, told me, just after giving some directions about the management of the navel of a a child whose mother I had just delivered, that he had lost not less than 12 or 13 little negroes from sore navel. This gentleman had the misfortune to loose his wife many years ago, and the care of the little children had been entrusted exclusively to their mothers. Whence, I ask is this great difference of mortality in the two last examples?

Many more illustrations of this kind might be reported,

but it is scarcely worth while to multiply them. Any one who is anxious to obtain additional information on this subject may do so by enquiring of the heads of families in this county, and they cannot fail to be impressed with the fact, that when physicians or intelligent nurses attend to the little negro children, cases of infantile lockjaw are very rare; so much so indeed, that a negative course in that respect towards them plainly, in its consequences, indicates the exciting cause of the disease. To conclude the present narration of facts, I will now introduce several communications on the subject which I have lately received.

The following extracts from a communication which I have just received from Dr. P. D. McCulloch of this place, on the subject of Trismus Nascentium, will be read with interest by all who are disposed to investigate the phenomena of this dreadful pathos:

"I have only investigated the cases which occurred in two large families as they presented the largest number of deaths in proportion to the number of births among them. In the first family, comprising sixty or seventy blacks, there have been within the last eight years twenty births; five of these died within the tenth day of their birth, and all of them with symptoms of Trismus, according to a reliable history of the cases. None of these received any attention from the white family until they had plain symptoms of the disease. In only one of these cases was the umbilicus examined, in which the phenomena of well marked inflammation were present. I examined into the method usually pursued by the attendant with her navel-dressings, and found it had been the custom of the old negress, who always attended to the children, when the funis became partially detached, to remove it and dress the wound with common chimney soot. After this was ascertained, the lady of the farm attended to the children in a great measure herself; since which time—three or four years ago—there has not been a case of the disease, although there has been a number of births since that period. It might not be amiss to add that 4 or 5 white children were born on this plantation during the above period, and that none of them were attacked with this disease.

In the second family which contained about the same number of whites and blacks, twenty or twenty-five children were born during the same period of time. Six of these children died of Trismus. The navels were examined in all these cases and were found to be in an unhealthy condition in every instance. The dressings used on this farm were usually nothing more than a coarse domestic pad, placed over the severed funis, and bound down by a common bandage.—The last of these cases occurred about four years ago; from which time to the present the children born on this place have been strictly attended to by some of the white family until they had passed the time of an attack of this disease. No case occurred at any time among the white children on this plantation."

Dr. M. Ransom, late of Texas, but now of our county, who resided some time on the Brassos, about 30 miles from Houston, has also kindly furnished me with some interesting facts, which I will now adduce:

"According to your request I send you a few notes on Trismus Nascentium, which I took during the summer of '49, while in Texas. My information with regard to its occurrence here until '49 was obtained chiefly from intelligent citizens very capable of recognizing the disease. It was not observed here, as far as I can learn, until about '45 or '46; since which time its prevalence has gradually increased every summer. Last year the mortality was very great from it, amounting in one or two instances to four-fifths of all the children born on some plantations, while on many others not one died. As a general rule there has been either a very considerable mortality on a place, or none at all. The disease appears in about one half of the families, and those families loose about one half of their infants on an average. The number of deaths from this disease among white children is comparatively small. This malady is much more frequent in negro quarters than in families where the children are more directly under the supervision of white persons. It also prevails more extensively in the River Bottoms, where the plantations are surrounded by dense forests hung

with moss, than in the prairies where the gulph breezes are unobstructed. It occurs, I may add, much more frequently in filthy, ill-ventilated houses than in clean, well aired ones, and is far more prevalent in summer than in winter.

"I have never seen a case of Trismus where the umbilicus was in a healthy condition; it, on the contrary, was generally swolen, irritable and not suppurating.

"I have never known a recovery from a well-marked case of this disease, except perhaps in a single instance; which if affected by any remedy, it was incissions over the swolen umbilicus. But this was tried at other times without the least success.

"Nothing had been done by way of preventing this disease until this summer, except the occasional administration of small doses of calomel or caster oil, for a week or two after the birth ot the child. During the present summer many of the plantations have employed the means suggested by the above facts for its prevention. The negro houses were freely ventilated, and the bedding and every thing about their houses kept clean. The thick greasy musquito bar which was before allowed to hang around the bed, enclosing the woman and her child in a confined, impure atmosphere, was stripped off, and the pure air allowed to circulate freely around them. The nurse was directed to apply some stimulating ointment, such as Red Precipitate or calomel to the navel, from the second day until it was perfectly healed.—When these prophylactics were properly attended to, they suffered very little from the disease; while on other plantations, where they were neglected, it prevailed as extensively as it did the previous summer. I have had no opportunity of seeing one of these preventives employed to the exclusion of the others; hence, have no evidence that one is more efficacious than the other."

Dr. Thomas C. Black of our county, well known as a close observer of the phenomena of disease has obligingly furnished me with the following statements:

"In reply to your inquiry about my opinion in the disease usually called Trismus Nascentium, I can state that during

eight or ten years of the early part of my professional life, I was pretty actively engaged in practice, and I suppose treated, at least, my proportion of such cases. I regret that I must say that I have nothing to offer as a remedy nor any treatment to propose which promises much towards the cure of the disease; for I have never seen a well marked acute case get well. A very large proportion of the cases which I have met with have been among negroes. In 1845 or '46, I lost three little negroes on my plantation in Mississippi with the disease. The children were at the Quarter, and under the exclusive management of careless negroes, nearly a mile from the dwelling house.

I have always been of the opinion that the disease had its origin in the unhealthy condition, or unnatural cicatrization of the umbilicus; and in most of the cases with which I have met I thought I could trace the result back to bad management of the cord. In one case of the little negroes which I lost, there were evident signs of inflammation of the umbilicus.

I have no recollection of having noticed any symptoms which indicated cerebral disease in any case that I have treated. The cases which I have seen occurred invariably from the 5th to the 10th day after the falling off of the cord."

Dr. McCulloch's cases are in full agreement with the general history of Trismus Nascentium in our county. The truths adduced by him accord not only with my own observations, but with those of others.

Dr. Ransom's notes taken while he was in Texas show the great activity of predisponent causes; also, how generally and easily children are affected by a morbid state of the navel when they come under the influence of such predisponents. Dr. Clarke's hospital cases illustrate the same truths. After all, it is not very surprising that such predisposing causes should have been mistaken by Dr. Clark, and others, for the exciting cause. So little attention has been paid to the proper relation of causes by writers on this disease, that it seems very few have attached sufficient importance to remote influences, or to a particular diathesis of the

system, but have been content to examine alone into the exciting cause; and this, consequently, when very weak or obscure, has not received that consideration which it even then deserves, in its relation to a predisposition to tetanus. Hence the great necessity of regarding these causes according to their mutual dependance on each other, that we may see their joint agencies, in producing an attack of this disease; also, that they may reflect a reciprocal light on the obscure plastic forces of the invading pathos. The general history of traumatic tetanus teaches us that it is more easily excited in adults by wounds sometimes than at others, according to the prevalence and activity of predisponent causes. This all admit. Whence then the necessity or propriety of entertaining or propagating different opinions as to these causes, and their effects in cases of infantile tetanus, associated as it often is with palpable irritation and inflammation of the umbilicus?

Just here, I must reply to two very specious objections to a proper view of this subject.

1. That the navel may be badly inflamed, and yet not cause tetanus.

2. That cases of Trismus have occurred when there was no inflammation of the umbilicus.

But for these considerations many would doubtless have entertained a much greater dread of a morbid state of the umbilicus, and would oftener have employed tetano-prophylactic measures in such cases. Indeed, with no little astonishment have I heard well informed physicians say, they did not believe that inflammation of the navel is the exciting cause of Trismus, merely because they had seen very badly inflamed ones, without the occurrence of lock jaw; or, that they had seen cases where the umbilicus had healed over.—Verily, my surprise would be only equaled by the assertion, they did not believe that a wound was the exciting cause of tetanus in the adult, because they had seen very bad ones fail to produce it, or had seen cases occur after the healing over of wounds. Almost every practitioner knows, from personal observation that an adult may receive

a deep, dangerous and painful wound without incuring lock-jaw as a consequence; also, that a wound may cause the disease after having healed over. Then, may not severe inflammation, or extensive ulceration of a child's navel run its course without causing trismus? and may not the part heal over and yet, by an occult pathological condition, excite the disease?

When we are called to see an adult patient laboring under this malady, and learn that he has been suffering from a wound, however great or small, whether from a cannon ball or prick of a needle, we give ourselves no further concern about finding out the exciting cause; or, if we visit one in whom a recent wound has healed over, and who notwithstanding is suffering from an attack of this disease, we feel confident that the cicatrix is in a morbid state and has excited the disease. But when some practitioners are called to see an infant afflicted with tetanus, they may learn that the child's navel is even badly inflamed, swollen and irritable, and yet ascribe the child's attack to some other exciting cause! Or, an infant may be seen with the disease, when the umbilicus has healed over, and instead of referring the attack to an unhealthy, irritable condition of the navel, though healed, as they do in cases of adults, this occult pathological state of the part is overlooked by them, and the disease is said to have been brought on by some other exciting cause! And yet, forsooth, had the little patient been an adult, with a badly inflamed, swollen and painful umbilicus; or with one that had just healed over, after having been in a morbid condition, the exciting cause would have been readily enough admitted. Hence, if I have not gained the point which I had in view, *the Reductio ad absurdum*, I have, at least, that of *the Reductio ad discrepantiam*.—A strange inconsistency has indeed been presented. It is even preposterous, I must insist, for any one to admit, that a slight wound, either before or after it has healed over, may produce tetanus in adults, and then deny that inflammation and ulceration of the navel do not excite it in infants, neither before nor after the part has healed.

Really, when we reflect on the great constitutional delicacy of infants, their great proneness to cerebral, spinal and nervous disorders, as well as their general susceptibility of disease, we would err less in supposing that their frequent sore navels were more likely to cause tetanus in them, than common wounds in adults. Assuredly, both adults and infants are liable to attacks of tetanus after wounds or ulcers have healed over; all admit that the former are, and that the latter are equally so cannot be either truthfully or consistently denied. A tetano-pathological condition of such cicatrices cannot be detected by any known means anterior to an open attack, especially in the cases of children, as they cannot complain of any irritation or pain which may be produced. And yet, we very often hear those of "fixed ideas" about their imaginary causes of this malady say, that in their cases the navel was healed over and looked very well, consequently the disease must have been excited by some other cause than by a morbid state of that part. The fallacy of such a conclusion has been, I hope, fully exposed; in further proof of which however, many cases might be adduced, but I will cite only two, both of very recent occurrence:—A few days ago I was called to see a negro boy 10 or 12 years old suffering from a plain, fatal attack of tetanus, brought on by a small wound which had lately healed over and had been lost sight of until that time. Several physicians of this place a few weeks since saw a similar case, well marked and equally fatal in its termination.

As it is not my design to offer any thing on the subject of the treatment of this incurable pathos, I shall not treat of its symptoms or varieties. My chief aim is to recommend a reliable prophylaxis, by which, a disease that cannot be cured, *may be prevented*. Just here, it might not be amiss to state, that occasionally a patient *gets well* of this malady; such a recovery is, however, only an exception to a general rule, which the attending physician sometimes mistaking for the general rule itself, has thereby been encouraged to treat a succeeding case with the same remedies which were supposed to have cured the case before, when to his surprise and morti-

fication he found them of no avail. Many well-informed practitioners have lost all confidence in the common routine treatment of the day; they entertain no reasonable expectation of relief, only as hope may be predicated on the recovery of a few exceptionable cases, independent of therapeutic agents. Hence, the great need of some prophylaxis.

The mother, from whose fond embrace the infant has been suddenly removed by this unrelenting foe, at a time when she needed all the joy and comfort which her child could inspire, may well ask, what is that prophylaxis? So may the benevolent physician, who has been so often foiled and mortified in his best efforts to cure the malady; even our farmers may well ask the question also in behalf of their slave interest.

I will now state by way of introduction to the prophylaxis which I shall, with great confidence, recommend, that I have seen probably as much obstetric practice, both among whites and blacks, as any practitioner out of the large cities, and never has an infant been attacked with tetanus, to my knowledge, of whose umbilicus I had the management.

Prophylaxis.—Means derive far greater consequence from their salutary effects in particular instances, than we could otherwise attach to them. While we almost dispise the enema commune, yet we glory in its effects, when by it, a dangerous and alarming obstruction of the bowels has been relieved. How lightly do we also regard the mere titillation of the throat with a feather until by its employment we cause the stomach to expel from its depths a poison which in a few minutes would have destroyed the patient. Then we respect the means and rejoice in the effects. The lancet cut is but a small thing in itself, and yet we exult greatly in its triumphs over some of our most acute diseases. Then it is to the effects of the prophylactic measures, that I will direct the attention of the reader as well as the means themselves.

Physicians have generally given up the dressing and management of the funis too much into the hands of unskillful nurses, lest by a careful attention to such small things, they might compromise their fancied dignity. But every one who

is properly impressed with a dread of tetanus from bad management of this part, will rather try to maintain his professional character and dignity by preventing a disease which he knows he cannot cure, however trifling the means may seem in the estimation of the ignorant, inexperienced or prejudiced.

The umbilical cord should be divided as usual about two inches from the abdomen, and well tied with a suitable ligature before its division. After the child has been washed by the nurse, another ligature should be applied lest the first one should become too slack from the contraction of the cord. A hole of a proper size should then be made through a piece of soft old domestic or linen, four inches wide and six long, through which the funis should be passed, and afterwards carefully wrapped with another soft piece of cloth two inches wide and three or four long. The cord should then be turned up towards the child's breast, and the cloth which was first applied should then be folded in on it from above and below, and from side to side. A soft flannel bandage should then be carefully put around the abdomen and pinned with moderate tightness. After this should the navel-dressings become wet with urine or soiled with feces, they should be carefully removed and dry ones employed. This should always be done by an experienced and careful nurse, lest the cord be prematurely detached. On a careful examination, should there be any signs of irritation, inflammation or ulceration of the navel, the piece of cloth through which the wrapped funis passes, should be removed, by cutting with a pair of scissors from without into the opening in the middle; this being done it may be removed without hurtfully disturbing the cord. After this has been done, it will be necessary to apply a little lard or simple cerate around the umbilicus, and apply another piece of cloth like the one just removed, unless the inflammation be very considerable; in that case, the part should be gently washed with warm milk and water, and a soft emollient poultice applied over the wrapped cord and surrounding surface to the extent of two or three inches. The application, removal and renewal of this poultice will require great care.

The chief advantage of wrapping the cord, is that of preventing it from adhering to the cloth through which it passes, and thereby preventing its removal when necessary. All awkward, rough handling of the cord should be avoided as the navel string may be, in that way, stretched, torn, or prematurely detached. After the funis has separated, the umbilicus should be carefully washed with castile soapsuds, and if there be the least appearance of irritation or inflammation, a soft mush poultice, somewhat larger than a dollar and about twice as thick, throughout its whole extent—lest the edges become dry—should be neatly spread on a soft piece of cloth, then moistened on its surface with a little lead water and olive oil, and laid with care immediately over the navel, and should be retained in its place by a proper application of the bandage previously employed. This poultice should be removed in six or eight hours and another applied, and so on until all signs of a morbid state of the part entirely disappear. It will sometimes be necessary to continue this course of poulticing for five or six days, to the entire exclusion of all other topical applications, such as calomel, red precipitate, spirits of turpentine &c., as their prophylactic powers are very inferior to those of the compound poultice just recommended. All predisponent, accessory or accidental causes should be removed with great care as far as possible; the general health of the child should be closely watched, and internal remedies employed if necessary.

Soft, emollient poultices, certainly afford even an adult suffering from a wound, greater protection than any other means. Who ever saw a patient attacked with traumatic tetanus, who had had all the prophylactic benefits of good poultices, a well regulated temperature of his room, and appropriate internal remedies? The soothing action of the poultice seems indeed to prevent a wound from passing into that condition which excites lockjaw. The terminal extremities of wounded nerves, or those that have been exposed by ulceration, or irritated by inflammation, are protected by a poultice against that tetano-pathological condition into which they

pass sometimes, when not thus guarded, with great facility.

But alas! because the inflammation of the navel is trifling, or the ulcer on it small, the physician does not consider either worthy of his attention, when, really, the very elements of death are more actively at work than in many other cases which so readily engage his closest attention and greatest skill. It is probable that a greater amount of human life might be saved by these simple preventives, than most physicians or nurses are aware of; and it is always far more difficult to procure the employment of such prophylactics, than those uncertain remedies which are so zealously administered sometimes for the relief of an incurable malady.

Nurses should be properly directed to employ these means, especially among our negroes; and every practitioner should constantly urge their adoption on all large plantations and negro quarters. When these means are faithfully employed, negro children escape tetanus to as great an extent as do white children. It should be the resolve of every practitioner never to allow an infant to be attacked with trismus that may be delivered by him, or placed under his care at birth, since by a patient and careful employment of appropriate prophylactics it may be prevented. These means, simple and unpretending as they are, require some oversight and tact for their beneficial employment: if the poultice be not well applied, of improper consistence, or becomes dry and hard, it may do more harm than good. Besides, if the child be not protected against wet and soiled clothing, bad air, variable temperature of its room, a bad habit of body, bad feeding and nursing, these predisponent, accessory and accidental causes, may cause the morbid umbilicus to pass into a traumatico-tetanic condition in despite of poultices or any other topical applications whatever; so it is highly necessary that all these things—little in themselves though great in their effects—should be scrupulously regarded by every conscientious practitioner.

The writer of this treatise, while faithfully discharging his duty to infants in the employment of these prophylactic measures, has often experienced the jeers and taunts of nurses

on such occasions. Every practitioner should, however, perform his duty to his little patient, be it white or black, in protecting it against an attack of a disease which he may prevent but cannot cure, and thereby impress nurses, parents and even communities with the great utility of such a course. In that way our prophylactics may be raised above the contempt of ignorant crones or those too wise to learn.