With the Compliments of the Author.

VARIOLA;

ITS NATURE AND TREATMENT.

(READ BEFORE THE PHILADELPHIA COUNTY MEDICAL SOCIETY NOVEMBER, 1857.)

WITH

AN ADDENDUM.

BY

ANDREW NEBINGER, M.D.

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EARLY in 1856, through the Committee on Meteorology and Epidemics of the Philadelphia County Medical Society, I had the honor to call the attention of the Society to my "compensative nutritive treatment" for variola. The report of the committee, after being read before the Society, was by it adopted as its report to the Medical Society of the State of Pennsylvania, and presented to that organization, at its annual session held in Philadelphia May, 1856, and published in its Transactions of that year (*Trans. Med. Soc. State of Pa.*, N. S., Part I. p. 176). The brief account of my "compensative treatment" embodied in the Philadelphia County Medical Society's report to the State Society thus brought before the profession, attracted from its novelty or from some other cause, attention, and I was invited by the "Business Committee" of the Philadelphia County Medical Society to read a paper before the Society upon Variola, in which I would set forth my views in reference to that terrible disease. To the committee's flattering invitation I assented. Accordingly, in March, 1857, I had the honor to read before the Society the paper upon "THE NATURE AND TREATMENT OF VARIOLA," which I now present through the press to my medical brethren. Since the reading of the paper, we have in Philadelphia passed through a most severe, long-continued, and destructive epidemic of variola—so destructive, indeed, as to have in 1861 produced a mortality of 778 cases. During this epidemic I have put the "compensative nutritive treatment" again to the test, and have been so much gratified with the results, that a high sense of duty to my fellow beings counsels me to "cast my crust upon the waters," that it may float,

through the instrumentality of the profession, to those whose necessities may require it.

A discussion upon "Variola, its varieties and treatment," took place before the Philadelphia County Medical Society, November, 1861. The discussion upon that occasion was opened by the reading of a paper by one of the Society's distinguished members, Dr. John Bell, and subsequently participated in by several other members. Part of that discussion I present as an addendum, for the purpose of exhibiting the advance, the positive improvement, the step in the right direction in the treatment of variola, during the roll of the past few years; also for the purpose of giving support and countenance to the "compensative nutritive treatment of variola," to which, from reason, reflection, and large experience, I am warmly attached.

A. N.

Philadelphia, May, 1862.

SMALLPOX:

ITS NATURE AND TREATMENT.

SINCE the days of Sydenham, but little, if any improvement, or, if you choose, but little change, has been made in the general or constitutional treatment of smallpox. The treatment Sydenham suggested and practised, and for the promulgation of which he was not only ridiculed, but rashly and coarsely denounced as an innovator, and even as a murderer, as far as I am aware, is substantially the treatment of the present time—a treatment essentially in all its characters, from first to last, medicinal and dietetic, reducing, non-supporting, and decidedly antiphlogistic. The particulars of this treatment it would be useless for me to recount, as they are equally if not more familiar to you than to myself. But, as it is essential to my purpose, I shall briefly remark that the Sydenham treatment—the treatment of smallpox of the day—is that the initiatory or febrile stage of the disease shall be treated with purgatives, cool drinks, neutral mixtures, and light farinaceous diet; that at the subsidence of the febrile and the introduction of the papular stage, the neutral mixture may be withdrawn, the purgatives and farinaceous diet continued; and this treatment must be pursued through the papular, vesicular, pustular, and desiccating stages, unless the so-called secondary fever should spring up, and spring up it will, if the case be severe, whether of the distinct, semi-confluent, or confluent variety; that upon the introduction of the secondary fever the use of the neutral mixtures must be resumed, a tapioca and gruel diet given, and the whole treatment, medicinal and dietetic, must be decidedly antiphlogistic, unless, however, typhous symptoms present themselves, when a little beef-tea, a small quantity of milk, and a little wine-whey, and some tonic must be administered. This is the

sum and substance of the Sydenham treatment—the treatment taught by the schools, enforced by practice in smallpox hospitals, and clearly, forcibly, and dogmatically set forth in all the books I have met with, which contain articles upon variola. With this treatment in all its parts I shall not find fault—to it, as far as it relates to the initiatory or febrile stage, I yield my acquiescence and cordial support. Thus far can I go, but no farther. For, beyond this, I deem the treatment defective, inefficient, pernicious, and I shall not refuse to say destructive. The Sydenham treatment has been largely developed out of the idea that smallpox is an inflammatory affection, and hence demands in all its stages a marked and decidedly antiphlogistic or anti-inflammatory medicinal and dietetic treatment.

It has occurred to me that this view of the nature of smallpox is an error; that it is not essentially an inflammatory disease; and that any destructive or threatening inflammatory affection which may spring up is *accidental*—a complication, and not an integral or inherent part of smallpox; that variola is essentially and radically a *suppurative disease*, or, in other words, that it is a malady in which a large or small quantity of pus, according as the disease is severe or otherwise, is to be generated, and that as a consequence of the generation of the pus, and the effort of nature to throw off the diseased portions of the tissues attacked, an erythema or inflammation is produced in the tissues involved, and that this erythema or inflammation is *necessary* and *required*, to the *successful*, perfect, and safe development and passage of the disease through all its varied and ofttimes severe and exhausting stages. Smallpox, I am convinced, is not an inflammatory disease; that it is not an affection in which its regularly inflammatory phase or part is the disease, or part of the disease, which is destructive to life, but that it is one of the characters of the disease, which is necessary to be produced and regularly developed; that the disease may run its course regularly, naturally, safely; and if such be the case, it follows that any treatment which may interfere with, obstruct, retard, or prevent the system from being in a condition to get up, sustain, and carry on this essential, and, if I may be permitted, I will say *vital* portion of the disease, is certainly irrational, unscientific, and pernicious.

If the inflammation of the tissues attacked by the eruption of

variola is necessary to the proper development of the disease, it differs widely from the inflammatory actions or conditions which we call pneumonia, pleuritis, peritonitis, &c. In these and all their kindred affections, the great end desired to be attained is *the arrest*, the destruction of the inflammatory action, and the *prevention* of the development of pus. But no sane physician desires in smallpox to prevent the inflammation incident to the full development of a variolous pustule or pock, knowing as he does that the pock cannot pass through all its stages of papule, vesicle, and pustule, unless there be inflammation present, as an essential condition; and if he does not desire to prevent, arrest, or destroy *this* inflammation, now as there is *none other* in uncomplicated smallpox, why regard variola as an inflammatory disease, and treat it as if this inflammatory feature was the dreadful, fearful phenomenon of the malady, and proceed with evacuants and by semi-starvation to give to it, and as a consequence give to the patient his quietus? I ask who ever knew a patient to die because of the pustular or irruptive inflammation of smallpox? Who of us have not seen smallpox patients die, and have not, in some of these instances, prognosticated their death because of the paleness of surface, or the defective inflammatory action of the skin around the pustules? Is it not a source of gratification to the well-instructed physician, when he visits his smallpox patient, and in examining the body, to find each pock if it be a case of the distinct variety, or each cluster if it be confluent, surrounded with a decidedly marked and well-defined line of inflammation, each pock well up, full, and elevated? And does he not deduce from these conditions a favorable prognosis? If, on the other hand, he finds the pock without the inflammatory ring, depressed, and presenting the appearance of having had part of its contents removed, he becomes filled with fear and doubt for the safety of his poor patient. He quits his bedside with aching heart, and, in answer to his patient's friends' inquiries as regards his condition, says "it is unfavorable, that his skin is *too pale*, and that the pock is not filling properly." Would he in the instance of the first feel himself justified in endeavoring to reduce the inflammatory ring? And would he in the second instance hope to sustain his patient and bring him safely through his attack by diminishing his food, and increasing the doses of his evacuants? Certainly not! Yet

if he would bring the first to the condition of the second, he may succeed, if the case be severe, by giving his evacuants at shorter intervals, and by directing a gruel diet; or he may be able to bring up the doubtful patient to the condition of the well-doing and well-promising one, if he will discontinue the use of his evacuants, and ply him well with such articles of diet as will improve the quality of his blood by increasing the amount of its fibrin—doing, in short, that which he would do to enable the system to carry on any other suppurative disease.

Indeed, the only view which appears to me to be rational in regard to smallpox, *is that it is a vast superficial phlegmon,* and here I cannot withhold a quotation from Dr. Watson's Article upon Smallpox. In referring to the varieties of the disease, he says "the number of pustules indicates, in the first place, the quantity of the variolous poison which has been reproduced in the blood. In the second place, it is also a *direct* measure of the extent to which the skin *suffers inflammation.* Sometimes there are not more than half a dozen pustules, sometimes many thousands. If all these were collected into one it would be an enormous phlegmon." "For both these reasons," he remarks, "the system suffers commotion, distress, and peril, in proportion to the quantity of the eruption." Yet notwithstanding this view, that when the pustules "are many thousands" in number, "if all these were collected into one, it would be an enormous phlegmon," Dr. Watson suggests, nay, advises and directs, the very opposite dietetic treatment to that which he would advise to be pursued in the treatment of "an enormous phlegmon." In treating "an enormous phlegmon," would we reduce our patient by evacuants and give a gruel or toast and tea diet? Would we not sustain the system with a good and generous diet to the end, that the phlegmon, the suppuration, the generation of pus, should take place with as little reduction of the strength and forces of our patient as possible; and this we would do because we well know that the production of pus in large amount is accompanied with exhaustion. Does not the system suffer the same degree of exhaustion, whether pus of a given amount be generated in "an enormous phlegmon," or in the pustules of variola? And if to *prevent* exhaustion from the production of pus, in the case of the phlegmon, from being extreme, we direct a generous diet, why

should we, in that other suppurative disease, where pus is generated equal in quantity to that produced in an enormous phlegmon, pursue the opposite treatment, and give a poor gruel and toast and tea diet? If it is the production of pus in the instance of the phlegmon, which demands a generous and sustaining regimen, why is it not, in the other instance, where the same material is produced, and that in like quantity, required to produce the same effect, the support of the system, the same means to be employed? Or is the generation of pus, in smallpox pustules, *less* exhausting than the generation of the same matter in an extensive abscess?

Smallpox, by writers, and by common consent, has been divided into several varieties: the Distinct, Semi-confluent, Confluent, and Malignant—these divisions being expressive of the severity and extent of the disease; the Distinct variety being the milder, the Malignant the more deadly form of the disease. It is in the Malignant variety that we see variola in its most terrific and uncontrollable aspect. But, be the variety what it may, it is always the same element, the same *Materies Morbi*, which is at work in the blood; producing the phenomena which, when arranged and grouped together, we call variola, or smallpox. The changes which the *Materies Morbi* of smallpox produce in the blood, in the Malignant variety of the disease are the *same*, which are produced in the other forms of the malady; the only difference is that these changes are not so extensive; the difference is only in degree, not in the nature of the changes. We have scarlatina, by common consent, divided into several varieties, scarlatina simplex, scarlatina anginosa, scarlatina maligna. No one will pretend to assert other, than that it is the same *Materies Morbi* which produces all the so-called varieties; and that the difference is not in the nature of the element productive of the conditions, but in the *degree* of change produced. And may it not with truth be said, that the direct tendency, the nature of the scarlatina poison is to produce the malignant form of the disease, which can only be regarded as that form of the affection in which the virus has produced, fully, *all* its phenomena, *all* its changes in the blood, etc. What is true of the scarlet fever poison is true of the smallpox poison. The malignant variety of variola is

that form of the disease in which the smallpox virus has produced, fully, *all its* phenomena, *all its* changes in the blood, etc.

Here let us ask, what are the most prominent and attractive changes produced by the variola poison as exhibited by the blood when that fluid is submitted to examination? A great diminution of the fibrin and the red corpuscles. One writer* says: "The characteristic lesions of smallpox are a certain deteriorated state of the blood; it is found entirely liquid and serous, and of a dark color; if coagula exist, they are small, soft, and very dark in color." Dr. Gregory† remarks: "To the most aggravated of all cases of smallpox, the terms malignant, or petechial, are generally applied, that from the earliest period of the disease, petechiæ are observed; sometimes the extent of subcutaneous ecchymosis is immense; as the vesicles advance to maturation they fill, not with pus, but with a thin ichor tinged with blood. Hemorrhages break forth from all the mucous structures of the body. The gums bleed often profusely. There is epistaxis, spitting of blood, vomiting of blood, and the passage of blood at stool." Who of us does not recognize in this portrait of *malignant smallpox*, as drawn by Dr. Gregory, the very likeness, the counterfeit presentment "of cases that we have seen."

I cannot, here, in exemplification of the broken-down condition of the blood, the small amount of fibrin which it contains, forbear giving the history of a case of malignant smallpox which came under my notice and care about one year ago. I was called to a lady whom I was engaged to attend in her second accouchement. The messenger who called upon me, stated that Mrs. A. was in labor and desired my prompt attendance. I repaired to her residence as quickly as possible, but, instead of finding her in labor, I discovered that she had fever, and she informed me that she had had a rigor, and was then suffering with violent headache and pains in the back and lower extremities. The pains in the back, from their severity and from her term of pregnancy, according to her calculations, having expired, she regarded as the pains of labor. I, however, diagnosed smallpox, and this I the more unhesitatingly did, from there having been two cases of the

* Dr. Meigs' Diseases of Children.

† Encyclopædia of Practical Med., Dr. Dunglison.

semi-confluent variety of smallpox in the house adjoining Mrs. A's. On the morning of the third day, when I visited Mrs. A., she informed me that she felt confident that she was then in labor and had been for several hours. Upon making the necessary examination to discover if she was correct, I found the os uteri well dilated, and the labor, in all respects, in good condition. In due time I ruptured the membranes, and within half an hour afterwards she was delivered of a healthy and vigorous-looking male child. The expulsion of the babe was accompanied with a very unusual quantity of blood. Presuming that the uterus had not contracted on the placenta, I quickly placed my hand upon the abdomen to make friction upon the womb, that it might grasp the placenta firmly, and the hemorrhage by that means become controlled; but I was surprised to find that the uterus was well contracted. I examined to discover if the hemorrhage continued, when, to my astonishment, I found the blood flowing from the patient in exhausting quantity. I tied and divided the cord, and delivered the placenta with the full hope and expectation that so soon as it should be removed from the uterus, and that organ should contract completely upon itself, the hemorrhage would cease. But I was again doomed to disappointment. The womb emptied, and it well contracted, the flooding continued, abating *only* in violence, but still the amount discharged being so great as to produce exhaustion and threatened syncope. In due time I quitted my patient; when I visited her the morning which succeeded her delivery, I found her literally covered with a petechial variolous eruption—epistaxis had set up, the hemorrhage from the uterus had increased, and a low form of delirium existed. The second day after her delivery she died. This was a case, a most violent case of malignant smallpox. The most curious, interesting, and instructive feature of the case (and it is because of that feature I have recorded it, and here call special attention to it), is that the uterine hemorrhage went on freely and fearfully because of the defibrinized condition of the blood, notwithstanding the uterus was firmly contracted upon itself.

If the analysis of the blood of those who have died of smallpox develops the fact that it is deteriorated, and that that deterioration consists in its being entirely liquid, serous, of a dark color, its

coagula small and soft; and if the blood in life of a smallpox patient is found to be so deficient in *fibrin* that hemorrhages result, and that owing to its deficiency in quantity and quality these hemorrhages cannot be stayed, I ask if that kind of treatment, the positive effect of which is to reduce the amount of fibrin, or prevent, when it is deficient in quantity, an increased development of that plastic material, can be the treatment indicated in a disease, the very nature and habit of which is to lessen or reduce the sum of the fibrin below the normal quantity? I have not created what I have here given as facts in regard to the condition of blood influenced by the variolous poison, nor have they been created by any one to suit any special theory or hypothesis. They are demonstrable facts, which have been found to connect themselves with smallpox, both ante-mortem and post-mortem; and I have only produced them here to fix attention upon what you know quite as well as those who have recorded them: and yet if they are facts, and very suggestive as regards the rational treatment of variola, are they not extremely important?

A patient dies of a disease—no matter what. After death, the blood is examined, and it is found to be deteriorated. It is entirely liquid and serous; its coagula, if any exist, small and soft; in short, the evidence is that the fibrin, the building-up material, the chief sustaining element, the pabulum of the blood, is decidedly deficient in quantity and quality. If that patient had been given freely evacuants or exhaustants, and had been severely, rigidly dieted—small quantities only of light, farinaceous articles of food given—would we not say that such treatment had had *its share* and part in the production of the condition of blood which we found to exist. At *least*, we would say that the evacuants and meagre diet had not had any counteracting power in preventing such condition from springing up where there was a tendency for its development by the morbific agent which produced the disease. In smallpox the facts are that the variolous poison, *before* it destroys life, robs the blood of its normal quantity and quality of fibrin; that, indeed, to produce death, it is necessary that the blood should be more palpably and attractively deficient in its plastic material. If such is the case, will evacuants, and a gruel, and toast-and-tea diet, sustain the blood? Will such food, in the small quantities directed by the books to be given, furnish

the system with the elements necessary to get the fibrin up to, and sustain it at, or nearly at, the normal degree in quantity and quality? Who is prepared to answer in the affirmative?

In a regular, uncomplicated case of variola, will any medical gentleman point out any inflammation that exists other than that which is in the tissues attacked by the eruption? No other inflammation exists. But what of *this* inflammation? Is it not an essential part of the disease? Can we have a well and regularly developed pock without that inflammation? Will not that inflammation be the more decided, positive, bright, and well-marked, in a patient of vigorous constitution, than it will be in one of feeble and fragile constitution? Will not the grade of the inflammation about the pustules indicate the degree of vigor of the system? The more exalted the inflammatory action, the more sthenic the system; the lower the grade of inflammation, the more asthenic. If there is in a regularly developed, uncomplicated case of smallpox, no other inflammation than that which is absolutely necessary to the proper development of the pock, then we must have that inflammation; its production is necessary to the safety of the patient; and if necessary to the safety of the patient, why should we do anything which will have even the slightest tendency to prevent it from springing up, or to diminish it after it has sprang up? Should we not do that which will sustain it? Can we do this by a liberal or free use of evacuants, and a defective diet? Do we not give evacuants, and a gruel and toast-and-tea diet, when we desire to diminish or destroy an inflammation? Will not such treatment control inflammatory action by diminishing the quantity of fibrin in the blood? and when we withhold from the economy a due amount of nutriment, do we not do so for the purpose of keeping down the development of fibrin?

Do not bleed in smallpox, say all the books and all the teachers, unless it shall be necessary to do so to prevent damage being done by a congestion of the brain, etc., and then bleed, carefully abstracting no more than may be absolutely necessary, for, say they, the system will require all the blood to support it in the last stages of the disease. This is good doctrine, it is true; it squares with all the facts, and is up to the wants and requirements of the disease. But suppose we should bleed, and it be in the instance of an adult, smallpox patient, and we abstract sixteen

ounces of blood, and we feel that by such abstraction of blood we have diminished the chances of recovery of our patient, for the reason that the blood has been deteriorated, or weakened, to use an expressive word, by the abstraction from it of sixteen ounces. In the teaching to save the blood is recognized the fact that all its elements will be required to sustain the patient, to meet the extraordinary drain or demand which will be made upon it during the progress and finale of the disease. What important difference, however, can it make to the patient, whether you rob him of sixteen ounces of his blood, and by thus diminishing its vitalizing powers, you diminish his chances of recovery, or you *prevent* his blood, by withholding a proper amount of food, from having its vitalizing powers sustained, and kept up equal to the demand made upon it? What difference can it make to the patient whether you impoverish his blood by bleeding, or by evacuants, or by giving a defective diet? To prevent impoverishment of the blood, for the reason assigned, the support of the system, at the close of the disease, we are warned and counselled to the careful use of the lancet; yet what difference can it make whether the blood be impoverished by the use of the lancet, or the withholding of such articles of food as will sustain the blood? Is it not a little curious that the same books which teach that not any of the blood should be abstracted, unless under peculiar circumstances, because it will be required to sustain the system in the closing stages of the disease, should also direct food to be given in such defective quantities, and of such quality as is quite unequal to the task of keeping up the blood, and hence unequal to the task of supporting the system in the closing stages of the disease?

In a sthenic inflammation do we not prevent the blood, if I may use the expression, from being kept fully fibrinized, for the purpose of controlling the inflammatory action? In smallpox the pustular inflammation is an essential portion of the disease; the arrest, destruction, or disturbance of it, interferes directly with the regular development of the disease; therefore, any treatment, the effect of which is to arrest, disturb, or destroy *that* inflammation, is unscientific, falls short of the requirements of the disease —is pernicious and dangerous. Hence, as evacuants, and a meagre gruel, and toast-and-tea diet, control and reduce inflammatory

actions, such treatment falls short of meeting the necessities of the smallpox. Again, do we not desire a sthenic condition of body in variola? If there is any disease which, over and above all others, requires for the safety of the patient a sthenic condition of system, that disease is smallpox. Are not the direct tendencies of the liberal use of evacuants, and the non-use of a generous diet, to produce asthenia, to impoverish the blood—to rob it of those elements which are necessary to sustain, give force and vigor to the body? Is not the destruction and reproduction of tissues, and the development of pus in large quantities, accompanied positively with exhaustion of the blood of its plastic elements? And will not that exhaustion be in a given ratio with the amount of tissue destroyed and reproduced, and the quantity of pus created? If such be true, then as we have in smallpox a destruction and reproduction of tissues, and the development of pus, we must by necessity have an exhaustion of the blood of its plastic materials, in proportion to the amount of tissue destroyed and reproduced, and the sum of pus developed; to meet which, the Sydenham treatment, the every-day treatment in hospitals and in private practice is evacuants, and gruel, tapioca, panada, and toast and tea in small quantities. Will not the chances of a smallpox patient's recovery be lessened as the grade of the disease advances from the distinct variety to that of the confluent variety—from the variety in which there is but a small destruction, and a small reproduction of tissues, and a slight development of pus, to that in which there is a larger destruction of tissues, and a greater production of matter? And will not this lessening of the chances of recovery of the patient be the consequence of the exhaustion of the blood? and will not this exhaustion of the blood follow from the destruction and reproduction of tissues, and the creation of pus? Can this condition be met—the exhaustion of the blood—and hence the exhaustion of the patient prevented, by the administration of evacuants, and the giving a light diet of slightly nutritious articles, such as crackers, gruel, toast, etc. etc., and those in quantities vastly smaller than the person would require to sustain him in health, even though he lived a passive life, a life accompanied with but little movement or activity?

Let us now turn to the books and see what in their own words

they say in regard to the treatment of smallpox. One author* (than whom none stand higher, at least on this side of the Atlantic, as a medical writer and teacher) says: "After the appearance of the eruption the regimen must be still cooling, though food somewhat more nutritious may be allowed, such as gruels, panada, toasted bread, and tea, water crackers, roasted apples, oranges, or grapes, milk and water, rennet whey, vegetable broths, etc., reference of course," continues the writer, "being always had, to the degree of excitement present. The diet, however, should be strictly antiphlogistic." The same writer further remarks, that it often becomes necessary to support the system under the prostrating effects of the abundant suppuration, and vast irritation of the pustules, when, therefore, an appearance of flagging is presented, when the pulse begins to weaken, the tongue to become dry and dark, and the extremities to show a want of due action, recourse should be had to tonics, stimulants, and a *nutritious diet*, proportionate to the apparent wants of the system."

Here is recognized the true treatment, a treatment compensative in its character—a treatment which presumes to make the supply of nutriment equal to the wants and requirements of the economy —but unfortunately *the time* for giving it is too long deferred. If *after* the system, from the prostrating effects of "the abundant suppuration and vast irritation of the pustules," begins to flag, the pulse begins to weaken, the tongue becomes dry and dark, and the extremities show a want of due action," this treatment, this administration of "*a nutritious diet*, proportionate to the apparent wants of the system," should control the bad conditions referred to—should sustain the system—and drive back the tide of typhous symptoms which had set in, and which, if not arrested, would certainly overwhelm the patient and hurry him onward to dissolution, if this nutritious treatment should accomplish so much after such unfavorable symptoms had made their appearance, might not the same nutritious diet, *earlier given*, have *prevented the production of these bad symptoms?* Here, let us inquire, why the bad symptoms mentioned sprang up? We will let the author we have been quoting make the reply. "It is often," he says, "necessary to support the system under the *prostrating* effects

* Dr. G. B. Wood.

of the *abundant suppuration* and *vast irritation of the pustules.*" It is then "the abundant suppuration and vast irritation of the pustules," which produce "the flagging of the system," dry tongue, weakened pulse, etc. If we know that the abundant suppuration and vast irritation of the pustules produce so great a drain upon the system, as to make it *probable* that these alarming effects may arise, why not *anticipate* and prevent them from making their appearance, by giving the "nutritious diet proportionate to the requirements of the system," at a period so early in the course of the disease as will cause, by their digestion, the blood to be so constituted as to meet the requirements of the system supporting it, under the abundant suppuration and vast irritation of the pustules?"

Permit me here to ask, if the patient up to the time of the development of the unfavorable symptoms of flagging of the system, dry tongue, etc., had been receiving *only* gruel, toast and tea, vegetable broths, and cracker panada, if the development of these conditions do not of themselves prove that such a dietetic regimen was insufficient and unequal to the requirements of the system; and the recommendation of a more nutritious diet, with the hope of controlling the bad effects of the abundant suppuration and vast irritation of the pustules is not a full and complete recognition of the truth, that a smallpox patient to be brought safely through his attack must be supplied with food of such quality and in such quantities as would be given to sustain the system in any other case, where there is a large amount of pus generated, and a large quantity of tissue to be reproduced? Suppose after these unfavorable symptoms have set up, we should succeed in saving our patient by the generous and nutritious diet; would we not have accomplished this by improving the quality of the patient's blood—by increasing the quantity and quality of its fibrin, its plasma, its vitalizing and sustaining elements? Would the necessity for doing this have existed at this period of the disease, if the patient had been using good and generous nutriment in large quantities, from the period the papules made their appearance? If a generous diet would arrest the bad symptoms we have referred to, would not such a diet by keeping the blood well up in its nutrifying elements, have largely tended to prevent the origin of these morbid phenomena?

Few, very few smallpox patients, whose "systems flag, their pulse grow weak, their tongues become dry and dark and their extremities evidence a want of due action," will be brought safely out of their attack by any treatment, no matter how stimulating and nutritious it may be, if such treatment shall not be commenced until these typhous symptoms shall have made their appearance. If the patient has not been well sustained before, our sustaining treatment for his cure will almost universally be then too late. *Prevent*, not cure, is the true doctrine, as these dangerous symptoms are the effects of an exhausted blood, that exhaustion produced by "the abundant suppuration and vast irritation of the pustules;" *prevent* this exhaustion of the blood, and as this can only be accomplished by giving nutritious articles of food, give them—and give them with an unsparing hand; give them abundantly, freely, and without stint, and I would say, almost without measure—while the blood is able to carry on the suppuration of the pustules, and to reproduce the disorganized tissues, there will not be any good cause for fearing a fatal termination, if the case be one of uncomplicated variola.

The blood, to be equal to the demand made upon it, when smallpox exists in a bad form, must be well constituted, and this it cannot be if the patient receives a diet made up of gruel, panada, toast, and tea. Such food, in the small quantities given, or the small quantities the patient will or can take, would not long sustain the body if there were no extraordinary drain going on, no unusual tax levied upon the economy. How, then, can such a dietetic regimen sustain the blood when there is an unusual, an extraordinary drain set up by the production of pus equal in quantity to that of "an enormous phlegmon," and the disorganization of a vast amount of tissue? Any form or quality of diet which is not competent to produce a blood in which the plastic elements are normal or nearly normal—a blood which will sustain the system under ordinary circumstances, *cannot* be *efficient* under extraordinary circumstances, when, for example, there is going on the generation of a large amount of pus, and there exists the necessity for the reproduction of a large amount of destroyed tissue, as is the case in confluent variola.

Dr. West, in his published Lectures upon Diseases of Children, in treating of variola, says: "In cases of confluent smallpox, the

patient needs to be very closely watched during the maturation of the pustules, for on the second or third day of this process the vital powers sometimes suddenly fail. The first indication of any such occurrence would be furnished by a subsidence of the swelling of the face and hands, the paleness of the skin in the intervals between the pustules, the collapse of the pustules themselves, attended with a sinking of the temperature of the surface, a great diminution of the power of the pulse. Such a state of the patient," the Dr. remarks, "calls at once for the *energetic employment of stimulants* and the *substitution*"—mark you, substitution—"of a *generous diet* for the *previous meagre diet.*" The recommendation here is virtually that, after the patient, by the use of a starving diet and the extraordinary drain upon the blood produced by the maturation of the pustules, etc., exhaustion makes its appearance, presenting as its accompanying phenomena those mentioned by Dr. West, then "the energetic employment of stimulants and the substitution of nutritious food for the previous meagre diet" must be had recourse to. But why this recommendation? Had not the previous treatment, part of which was the "meagre diet," been given with an intention, and was not that intention the prevention or arrest of inflammation, and was not that end and intention attained, as evidenced by the subsidence of the swelling of the face, the paleness of the surface of the skin between the pustules, and the great diminution of the force of the pulse? But lo! the end attained, behold the terrible consequences which follow, and to counteract which "the energetic" employment of stimulants and nutritious food is directed. Now, if the patient should be benefited by the employment of stimulants and nutritious food, will not the benefit be manifested in the paleness of the skin being displaced by a redness, the temperature of the surface being exalted, the pulse increased in strength and volume, the tongue becoming moist—in short, by a *return* to that better state which existed previous to the skin growing pale, the pulse small, etc.? But, if this stimulating and nutritious treatment should bring *back* the patient to the condition in which he was *before* the threatening symptoms set themselves up, will it not have to be continued day by day to sustain the patient until the desiccating stage has been safely passed through? and if so, would it have been any more unwise to

have given it *before* the bad conditions made their appearance, and by its use have *kept the patient with the reddened skin, exalted temperature of surface, full pulse, full pustules,* and sthenic condition of system? If it is safe and wise to get the system into this condition, and there maintain it by such treatment, after the unfavorable conditions referred to have made their advent, would it not have been equally safe and wise to have kept the system sthenic when it was so? If the stimulating and nutritive treatment will have the happy effect of restoring the system *after* it had reached a great degree of feebleness and exhaustion, would not such treatment be competent to prevent the body from passing into such alarming extremity? and if so, why not give the nutritive diet and stimulants earlier?

So completely does the idea of variola being an inflammatory affection haunt the minds of medical gentlemen, that the strictly antiphlogistic regimen is pursued—the meagre diet is persisted in until the blood becomes impoverished, and vitality begins to fade and grow dim, when, taking alarm, and then *seeing* that which we ought to have *foreseen,* that the generation of the pus and the reproduction of so much disorganized tissue would necessarily get up an extraordinary demand for the plastic elements of the blood, and that this demand to be met would require the introduction of nitrogenized articles of diet into the system in such quantities as will be competent to keep up the plasma of the blood at, or nearly at a normal figure, we then commence that which we should have commenced before—"the energetic employment of a nutritious diet and of stimulants."

The principle of action should be compensative—large demand for plasma, large supply of food. The very opposite, unfortunately, of this to me natural and reasonable treatment, is recommended and pursued in the management of smallpox. As a general thing, the severer the case of variola, the more attention we give it; and the more attention it receives from the physician, the more strictly enjoined will be the meagre diet, the more limited will be the supply of nutriment, until bad, or typhous symptoms develop themselves, and then to arrest them—to overcome that which we had been no little, but nevertheless unwittingly, instrumental in producing by our starving diet—we commence

the use of a generous regimen, and thus endeavor to *cure that which we might have prevented.*

Without tiring you by any comments upon the treatment recommended for variola by one or more writers, I will submit their recommendations to your consideration, and kindly ask you to apply my arguments to them. Dr. Dewees, in his articles upon confluent smallpox, says: "All animal substances must be strictly forbidden, and if the body requires support, the farinaceous and mucilaginous substances should be selected, such as tapioca, sago, arrowroot, and gum Arabic."* Dr. Gregory says: "In all circumstances the diet is to be regulated as in *other* cases of *inflammatory fever.*"† Dr. Watson remarks: "If the maturation of the pustules should proceed tardily, if they should not fill up properly, nor their contents become purulent, then strong broths may be of use, even wine." Here, in the face of authority highly exalted, before which I have been taught to bow with almost reverential awe, and to whose dicta I have been instructed to yield with almost abject submission, I pronounce my humble dissent from the meagre dietetic regimen—the rice, tapioca, arrowroot, and gum Arabic diet—in such cases of smallpox as by the severity of that loathsome and filthy disease patients have their lives endangered—and offer in lieu thereof, my "*compensative nutritive treatment,*" based, as I think, upon the better idea of the nature of smallpox, which does not see and comprehend it as an inflammatory affection, but a suppurative tissue-destroying, blood-exhausting, blood-defibrinizing malady, requiring as part of the treatment to meet those conditions, and to *compensate* for the severe drain upon the blood, the introduction in large quantities of such nitrogenized articles of diet as shall most easily, most speedily, and most agreeably to the taste and comfort of the patient, meet these requirements. Such a compensative diet I have found, by a comforting and cheering experience of its use, to be eggs and milk—two articles abounding largely in azotized elements, easily obtained, and easy of preparation for the use of the patient.

As a synopsis of my dietetic treatment in smallpox, I have

* Dewees's Pract. Physic, p. 195.

† Cyclopædia of Practical Medicine, vol. iv. p. 170.

here but little more to say than what I have already said, and which is embodied in the published "Transactions of the Medical Society of the State of Pennsylvania."* My practice has been in all cases of smallpox, during the initiatory or febrile and papular stages of the disease, to prescribe an antiphlogistic, medicinal, and dietetic treatment; but to abandon this form of treatment as soon as the papules begin to take upon themselves the vesicular form, and then commence a treatment which, in all its essentials, shall be supporting.

In carrying out this treatment, I have not found any diet so useful, so grateful to the patient, or any which gave as little inconvenience to swallow when the mouth, fauces, and throat were studded with pustules, as a combination of eggs, milk, sugar, and ice, made in the proportion of one egg well beaten—half a pint of milk, sugar and ice in quantities suited to the taste and desire of the patient. When the necessity for stimuli has existed, as it does in all cases of the confluent variety of smallpox, I have added brandy, or what I think better, Monongahela whiskey, because for purity it can be more safely relied on, and can be more readily obtained. The quantity of this diet which I direct the patient to use in confluent smallpox is half a pint, or a tumblerful, with a large tablespoonful, or half an ounce, of Monongahela whiskey added to it, every two hours or every hour and a half *during the day and night.* I have frequently had patients to take as many as twelve eggs, three quarts of good new milk, and eight ounces of whiskey daily for several consecutive days—and yet, with all this supporting and stimulating diet, this most excellent proteine or highly nitrogenized food, these poor fellows barely escaped sinking into the grave, some of them having had (notwithstanding they were so vigorously supported with food, and so actively stimulated) that peculiar feebleness and tremor which is always the unmistakable evidence of a breaking up of the vital forces—the threatenings of dissolution. Here permit me to ask if with all this, as some would call it, excessive nutritive treatment, but which I would dignify with the appellation of *compensative nutritive treatment,* these patients barely survived the wasting effects of the disease, what would have been the result,

* Trans. Med. Society of the State of Penna., N. S., Part I. p. 176.

if, as is too often the case in smallpox, their diet had consisted of a little toast and tea, a small quantity of animal broth, or a boiled egg or two during the day? I know not what reply others may make, but I hesitate not to say that, instead of having had the pleasure of giving them clean bills of health—restoring them to their families and friends, and of being able now, all blurred, scarred, and marked as they are, of referring to them and holding them up as the proud, living, active, moving trophies acquired by this humane treatment in the dreadful, fearful conflict as instigated by smallpox, between life and death, I should have been called upon in sadness to have written for them passports to the grave! I would also remark that in the variety of cases of smallpox to which I have been referring, I do not restrict patients to eggs and milk, but permit them to use meats, poultry, in short, any food abounding largely in the proteine elements, and indeed I do not only permit of their use, but urge those articles of diet upon them, with the *assurance* that in such cases to eat is to live, to abstain is to die, and this I do feeling confident that it is positively necessary that the patient should be given such articles of food, that the digestive apparatus may have at their disposal such matter as will enable them to supply the blood with the elements necessary to carry on a vigorous and rapid maturation of the pustules and all the offices of vitality.

Before closing, I would be doing injustice to the subject if I were not to make some remarks upon the so-called secondary fever of smallpox—a misconception of the nature of which, in my judgment, has prevented many a patient from receiving the supporting treatment his condition required, and caused him to swallow many an exhausting dose, producing an aggravation of his sufferings, and lessening the chances of his recovery. Dr. Wood says, "Upon the occurrence of secondary fever, the original diaphoretic and refrigerant plan should be continued in a degree corresponding to the excitement and strength of the patient."* Dr. Gregory, writing of secondary fever, says: "When the disease (smallpox) has been severe, and secondary fever has set in, the excitement is to be allayed by occasional doses of antimonial powder with calomel, followed by an active aperient."† Another author, in

* Dr. G. B. Wood, Pract. Med., art. Smallpox.

† Encyclopædia, Pract. Med., vol. iv. p. 169.

writing of smallpox in children, remarks that about the fifth or sixth day of the eruption, at which time the maturation is nearly completed on the face, and that process is commencing on the extremities, a new fever, to which the technical term secondary fever is applied, makes its appearance. This fever commences to diminish when the suppuration is fully established, and *disappears* about the time that desiccation is nearly completed on the face, and has commenced upon the limbs."* Dr. West, in his observations upon secondary fever, remarks: "If the eruption be more abundant, and the accompanying secondary fever consequently severe, an antiphlogistic plan of treatment must be carried out *more* strictly."† Dr. Watson teaches, "that the proper plan of managing smallpox patients, during the continuance of the secondary fever, is to keep the bowels moderately open by gentle laxatives or enemata, and to give opiates once or twice a day. The cooling regimen must now," says the Doctor, "be given up, and the strength of the patient must be supported by a nourishing diet." It will be observed that in the recommendations of the writers, whose language I have quoted, there is, in the management of secondary fever, a want of agreement. Dr. Wood, in secondary fever, says, "The diaphoretic and refrigerant treatment must be continued." Dr. Watson says, "The cooling regimen must be given up, and the strength of the patient supported by a nourishing diet." Dr. West directs in secondary fever that "an antiphlogistic plan of treatment be strictly carried out." "When doctors disagree, who shall decide?"

Before advancing further, let us inquire what this so-called secondary fever is? What produces it? What is its nature? I think that even by a reference to the quotations I have given from the different authors and teachers already named, or referred to, we shall have a solution of our queries. About the sixth day of the eruption, at which time the maturation is nearly completed in the face, and *that process* is commencing in the extremities, secondary fever makes its appearance, says one of the writers. Dr. West says if the eruption be abundant the accompanying secondary fever *consequently will be severe*, etc. Without going further, these two writers unfold to us, as the cause of secondary fever,

* Dr. J. F. Meigs, Diseases of Children.

† Dr. Charles West, Lectures on the Diseases of Children.

the maturation of the pustules—the generation of pus. The fever is *introduced* when maturation commences, *diminishes* when suppuration is fully established, and *disappears* when desiccation is nearly completed. The extent and severity of the fever is in due ratio with the number of pustules, the irritation of the skin, and the quantity of pus produced. The conclusion to me appears irresistible that secondary fever of smallpox is a pustular or suppurative fever—no more, no less. If this conclusion be correct, the treatment of secondary fever is perfectly clear. The efforts of Nature at the time secondary fever sets in, are to develop perfectly the pustules and to reproduce the disorganized tissues, and this fever is only an effect of these efforts, it is only one of the phenomena produced by the *vis medicatrix naturæ*, which is at work endeavoring to rescue the patient from death and the grave. Will we not oppose this preservative power if we administer "refrigerants, diaphoretics, antimonial powder combined with calomel, and active aperients, and give only a little of farinaceous articles of diet?" Can such be the proper treatment of a suppurative fever? Are exhaustants and a defective diet the means indicated for the safe and successful management of such a fever? Secondary fever is as much a suppurative or pus-generating, concomitant fever as is the fever which attends the generation of pus in the instance of a phlegmon. In treating a mammary abscess, for example, would we expect to benefit our patient by a strictly antiphlogistic plan of treatment—by refrigerants, diaphoretics, evacuants, tapioca, and arrowroot. We would, when we discovered that resolution was impossible to hasten the development of pus, and sustain our patient, give a nutritious diet. Just as little alarm, too, as the suppurative fever, incident to the production of pus, would give us in the instance of a phlegmon, just so little alarm, and no more, should the secondary fever of smallpox give us while it remains sthenic; and to have it remain so, or to cause it to be so if it has been otherwise, we must sustain, not exhaust—we must feed well, not half-starve the patient.

The time when secondary fever exists, it may be said, is the culminating period of smallpox—the period when the causes of exhaustion are at their maximum—the time when all the powers of the economy are most beset, most heavily taxed. Yet at this

period, when certainly the most support is required, the treatment recommended by writers and teachers, and that, too, which is most practised, is to give the least support, and not only this, but to add to the exhaustion incident to the disease, that exhaustion which is produced by the use of refrigerants, diaphoretics, and active aperients.

To me the great object to be attained in the management of the so-called secondary fever of variola has been to keep it sthenic. As the maturation of the pustules is the cause of that febrile condition, its grade will depend upon the vigor with which the maturation or perfecting of the pustules goes on. If they maturate rapidly and promptly, the fever will be decided and sthenic; if the pustules maturate slowly and doubtfully, then the fever will be typhoid in its form. This is the condition to fear, therefore the condition to prevent; and as this can only be done by supporting the system, or by placing at its disposal such articles of diet as will enable it to carry on the maturation of the pustules rapidly, promptly, and decidedly, I cannot see any reason why, during the continuance of the fever, food should be withheld, antimonial powder, calomel, and active aperients should be administered. But I do see the positive necessity for the avoidance of exhaustants, and the administration of a highly nutritious and supporting diet; and seeing and regarding this necessity, my practice has been to give liberally nutritious articles of food, and I have abundant cause to be gratified with the good effects which I have witnessed flow as consequences of their use.

My treatment, when secondary fever has dawned, has not been to alter or abate in the least the use of my compensative, nutritive, and stimulating treatment, but to continue it, rather increasing than diminishing its vigor as the fever progresses. This fever I desire to sustain, regulate, not destroy; and this I accomplish by giving freely and abundantly highly nutritious articles of diet, and, if needs be, stimulants. The results of this treatment have been to me evidences of the correctness of my views of the nature of the so-called secondary fever of smallpox.

ADDENDUM.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

REPORTED BY WILLIAM B. ATKINSON, M. D., RECORDING SECRETARY.

NOVEMBER 13, 1861.

VARIOLA, ITS MODIFICATIONS AND TREATMENT.

Dr. Bell.—This subject was selected for me by the committee, to make some remarks on this evening. In restricting myself within these limits it will not be necessary for me to speak of the origin, symptoms in detail, and morbid anatomy of variola. * * * * * * * * * * * * * *

The two most noticeable varieties of variola, especially in reference to prognosis, are the distinct and the confluent. The first is usually quite manageable; the second, under any and every kind of treatment, is, in a large majority of cases, fatal. The liability to the one or the other of these varieties does not seem to depend on age, constitution, or previous habits. * *

As pustulation advances on to maturation, the fever is greatly moderated; but with beginning desiccation comes, often, secondary fever, during which the patient may sink beyond recovery. * * * * * * * * * * * *

In confluent cases, early recourse will be had to a cordial and sustaining treatment, by the use of ale or porter, and of wine or brandy, in gruel, farina, etc., wine-whey, milk-punch, and nourishing broths. One or more of these, as may be selected, should be regularly given at the prescribed intervals, by night as well as by day. In variolous, as in other fevers, many a patient has sunk beyond recovery during the night, especially between midnight and morning, for want of the administration of diffusible and nutritive stimulants in alternation. *

Dr. Coates.—There seemed to him a very serious contradiction between the old alleged experience of so many years, ever since the time of Sydenham, that the cooling treatment was the most successful, and the recommendation to give warm punch, etc. He did not believe that success depended on extremes or on exclusives, but believed that the best results would be met with from moderation in the use of medical agents, and such a regimen as comported best with the comfort of the patient. * * * * * * * * *

He had seen a case of a black man with confluent smallpox bled in the hospital; the oozing went on for twenty-four hours, and he died, though probably he did not lose more than an ounce and a half after the bleeding, which was to ten ounces.

He doubted saving any great number of lives by any treatment. * * *

Dr. Condie.—In respect to the different forms or varieties of variola, he was convinced that they had been multiplied by writers on the disease to an unnecessary extent. In a practical point of view, little was to be gained by any other distinction than that which was based upon the extent and discreteness of the eruption—the absence or presence of petechiæ, or other serious affection of the skin, the character of the fever, and the dynamic condition of the general organism by which the disease is accompanied. * * * * * *

In respect to treatment, notwithstanding much good may be effected by appropriate medication commenced at the very onset of the disease, and in anticipation of the eruption, yet it must be borne in mind that every attempt directed to procure an abortion of smallpox, to arrest it in any of its stages, will fail. The adoption of proper therapeutic measures previously to the appearance of the eruption may have the effect of reducing the violence and diminishing the danger of the attack, but can neither prevent it from occurring nor from running its specific course.

For smallpox there is no specific treatment. Every case of the disease, as it occurs, must be treated upon general principles, according to the indications presented. Mild cases, occurring in patients who are temperate in their habits and of a good constitution, a purely expectant treatment is all that is in general demanded. In more violent cases, and in those which happen in patients of bad habits and impaired constitutions, the utmost watchfulness, with a prompt and decided course of treatment, will be demanded, and will often be crowned with success.

There is, perhaps, no disease in the treatment of which greater attention is required in respect to the regimen of the patient. Without pure, fresh air, a proper temperature, the strictest cleanliness, with a suitable diet and appropriate drinks, all other remedial measures, however well adapted to the case and judiciously and faithfully administered, will fail to exhibit any curative efficacy.

Since the time of Sydenham, what has been termed the cooling treatment has been very generally recognized as the one best adapted to smallpox. Dr. Condie, however, feared that the "cooling treatment" has in some instances been carried too far, and, in consequence, has been productive of harm rather than benefit. Attendant upon many cases of the disease there is a manifest tendency to a sinking of the vital powers of the patient, which tendency cannot fail to be increased by such a cooling regimen as Dr. Condie had seen put in practice during the present epidemic—the patient being kept in a cold room, with a draught of air upon him, from open windows, night and day, and allowed to partake freely of iced water or lemonade. Some even carry "the cold regime" so far as to subject the surface of the patient's body to sponging with cold water. If there be any tendency present to adynamia, such a treatment must necessarily tend to confirm it. Dr. Condie would not be understood, however, as countenancing a heating treatment in the cases of smallpox as they ordinarily occur. While he deprecated an excessive cooling regimen, he would at the same time insist that there occur but few cases of the disease

in which a well-ventilated apartment of moderate temperature, but free from draughts, is not essential to the safety and comfort of the patient; and equally as few in which he should not be allowed the free use of any simple cool fluid as a drink. * * * * * * * * * * * * * * * * * * *

In respect to the propriety of depletion or of stimulation in the management of smallpox, this must be decided by the circumstances of each separate case—the general character of the prevailing epidemic being always, however, taken into consideration. In very few cases during the present prevalence of smallpox, had Dr. Condie found it necessary to resort to an active antiphlogistic treatment. In the majority of cases which fell under his care, the treatment pursued was such as would be demanded in the ordinary form of typhoid fever. In general, a tonic and moderately stimulating treatment was indicated throughout the attack. In the more severe cases, diffusible stimulants were demanded to sustain the patient while the disease ran its course, and until the revival of appetite and a renewal of the powers of the stomach furnished the opportunity for a resort to tonics and a nourishing diet, by which alone we can reasonably hope to restore permanent strength to the patient. * * * *

In very nearly all the more severe cases, accompanied by a profuse eruption, Dr. Condie had found that, during the stage of maturation, a full nourishing diet, whenever it could be taken, with a liberal use of alcoholic stimulants, was essential to sustain the vital forces. Rich broths, oysters, stewed or broiled chicken, tenderloin steak, and such like articles he has known to be taken and relished, and believes that he has just cause for ascribing to their use the preservation of his patients' lives in numerous instances.

Dr. Nebinger would premise by remarking that he had taken no little interest in the treatment of smallpox. If there is any one disease to which he had given more deliberate consideration than another, that disease is variola. This greater consideration certainly had not arisen from any special pleasure he found in coming in contact with so disgusting and loathesome a malady, but had perhaps its cause or incitement in his sympathies being largely aroused for the patient, because of his isolation from relatives and friends, and the offensive and forbidding character of the disease, especially when it presents in the confluent form—then the most terrific of all the exanthemata.

The petechial form of variola, which should be called malignant, the form in which the vesicles fill with blood, or rather with bloody serum, he had seen, but had never been able to cure, and felt confident that attacks of this form of the disease always prove fatal. The confluent type of the disease is the next most formidable, but is not necessarily fatal; although, under the best management, it will march on to a fatal termination. The gentleman (Dr. Bell) who opened the subject, remarked, in regard to the confluent variety of smallpox, that the large majority of all thus attacked die: in this declaration he is in harmony with all writers and authorities upon the disease. Yet, while this declaration is true, as far as the experience of those are concerned who treat variola after the style and fashion, the manner and form of our dead, and yea, some of our living fathers in medicine, he would remark with due

and becoming respect and exalted consideration for these, the past and present, that so far from the large majority of his confluent smallpox patients dying, the majority recovered. But then he did not treat smallpox as it has been and is generally treated, or as the books and authorities recommend. His plan of treatment was, in the main, not only different, but vastly different, from that taught by the books and practised by the profession. To this treatment he had called the attention of the profession more than once, and he was happy to say that he had met with some very gratifying responses from those who had had the courage to step aside from the old, too well-beaten and too oft-trodden track, to venture upon the new and better one. What is the nature of confluent smallpox? The correct answer to this question will give the only true indications for treatment of this form of variola. What, then, is confluent smallpox? It is a disease in which the patient's body is wrapped up, as it were, in a thick sheet of pus, and in which there is nearly a complete destruction of the external covering of the body and part of the cellular tissue beneath the skin. Dr. Watson says, the quantity of pus generated amounts to quarts. This is, doubtless, true. In the pustules, when fully developed, the pus exists in a semi-concrete or highly condensed form; but little more than the solid constituents of the pus being present, in consequence of the liquid constituent having, as the pus was being developed, evaporated or passed out of the pustules by exosmotic action. Thus, then, the variety of the disease under consideration is one in which nearly the entire skin and part of the subjacent cellular tissue are destroyed, and quarts of pus are generated. With these facts before us, and duly reflected upon, it is self-evident that great exhaustion must necessarily result. How shall we first assist the organism in developing the quarts of pus with as little exhaustion as possible, and this done, next enable it to reproduce the destroyed tissues? The only rational answer is, by generously sustaining the patient. But what, under the circumstances, constitutes a generous support? Will you say bread and tea, cracker, panada, water-gruel, tapioca, and arrowroot? He knows that this is the diet generally of smallpox patients, no matter how severe and exhausting the attack; or rather, he would say, that such was the diet until the patient had reached, or nearly reached, a fatal exhaustion, when milk-punch, beef-tea, and such food are directed, and then too often presented either too late or in too small quantities for the safety of the patient. Bread and tea, water-gruel, and panada will not, even though you could induce the patient to partake freely of such diet, meet the requirements of an economy being exhausted in the manner he had referred to. The necessities of the system are great, and can only be successfully met by the introduction of the highest order of aliment, and that in large quantities. He had heard but recently of a case of confluent smallpox; the patient was an adult male, who was restricted to three glasses of milk-punch per day—the doctor in attendance declaring that a greater quantity would be injurious! For one moment reflect upon that. Three glasses of milk-punch in twenty-four hours, for a man covered from head to foot with pustules, the whole surface of his body being destroyed, and the necessity existing for its reproduction; and yet those

pustules were to be perfected and the whole surface of the body to be reproduced out of three glasses of milk-punch per diem! Need he say that sloughing of the skin and cellular tissue took place, and that the patient died? No, he need not. You must know that, under such treatment, no other result could follow. "Three glasses of milk-punch, and three only; more would be damaging." Why, if a well man was permitted to take as his only food but three glasses of milk-punch every twenty-four hours, he would in a short time starve to death on it. Yet, gentlemen, this is the treatment given to confluent smallpox patients. Is it wonderful that the great majority die? But a few weeks ago, he was called to see a woman laboring under an attack of confluent smallpox, who had been treated by another physician. He found her so exhausted that she could not reply to his questions in tones audible enough for him to hear. She was so exhausted that she could not sustain her head upon the pillow in a line with her body, it falling from the pillow and approximating the bed. The skin on her face and arm in many places were sloughing, and he could, with but a slight effort, have stripped the arms of the skin, such was its condition. This woman was living—no, not living, dying—on toast and water, arrowroot, and gruel. He at once ordered her egg-nog, and set the time it was to be given and the quantity. He did not order but three glasses in twenty-four hours, under the impression that more would be damaging; but he directed her to be given a glass every two hours. On his second visit, which was about twenty-four hours from the first, improvement was manifest; she was able to speak so as to be heard, and was able to sustain her head upon the pillow. Between his two visits she had taken twelve glasses of egg-nog. Do not, at this announcement, be frightened from your propriety. This treatment was continued day after day, until she was able to take other food. And under this, as some would and have called it, extraordinary nutritive treatment, recovered. The proof of its utility is found in its results. Try the treatment. Put it to the test before you pronounce judgment upon it. Be assured it is worthy of a trial.

He had recently treated a lad of seventeen years, who had a most exhausting attack of confluent smallpox. In the house with him were four others who had the disease in the distinct form. The lad referred to did not come into his hands until the fourth day of the eruption. He was delirious—his delirium closely resembling the ravings of mania-a-potu. He had not slept for forty-eight hours, and it was with much difficulty he could be restrained and confined to his bed. The doctor succeeded in controlling his delirium and produced sleep with opium. As it was evident from the extent of the eruption that the case would be a grave one, he commenced at once to sustain him by the free use of eggs and milk. This was continued for three days, when whisky was added to the eggs and milk—of this (the egg-nog) he was given as much as he could take. It was manifest to the doctor that those who were nursing the boy had concluded that he would die, and as the duty of taking care of him was a most disagreeable one, the impression that he could not get well had its bad effect of preventing the free administration of the nutriment. He felt a deep interest in the boy's recovery, and for the purpose of keeping

his attendants from neglecting him, he visited the lad three and four times daily, while he was extremely ill, and upon each occasion gave him freely of egg-nog. This was one of the worst cases of smallpox he ever beheld. His eyelids were not separated for eleven days. The entire surface of his body was covered with the eruption. The skin in several places was gangrenous, and he became emaciated as he never saw a smallpox patient emaciated before.

Now this lad drank quarts upon quarts of egg-nog and milk, and yet with all this extraordinary nutrition, he became extremely prostrate, much emaciated, and had gangrene of the skin. What would have been the result if he had been given the water-gruel treatment? There cannot be any difficulty in determining. The patient, under high and free nutritive treatment, recovered, and he now lives to proclaim the utility of generous nutrition in confluent smallpox.

After the first three days, the period which precedes the eruption, medicine ceases to be, as a general matter, of any use. The great, the pressing indication is food, and it matters not what the food is so that the patient takes enough of it to meet the requirements of the economy. Dr. N. employs milk, eggs and milk, and egg-nog, not that there is anything of special importance about those articles of diet, only that they are as grateful to the patient as any food which can be presented, and give as little pain to the pustulated throat and mouth as any food which can be given. Yet, for the generous nutrition which he recommends to be of positive service, it must be commenced early. It will not do to put off supporting vigorously the patient, until prostration begins to manifest itself—our nutrition, then, be it ever so generous, may be without benefit. That the blood may be so sustained as to meet all the pressing wants of the economy, we must commence early. Commence immediately upon the papular stage closing and the vesicular stage opening. Passing from milk to eggs and milk, and from eggs and milk to egg-nog, as the pustules develop and the disease progresses.

Much stress has been placed upon what the books and teachers call the secondary fever of variola. He must enter his objection to this name, for the febrile disturbance which springs up during the development of the pustules, and subsequent to their development. He objected to the name because it is an improper one, and is well calculated to lead to false ideas of pathology and improper treatment. The fever should be called pustular, maturative, or irritative fever, as it would then express the cause, upon which its development and continuation depends. But what of this secondary, or irritative fever? Why shall we, as the books direct, withhold at this period generous diet from the patient? Will its absence diminish the fever? Or, is it important to the safety of the patient that it should be diminished? Do we not desire that this fever shall be sthenic; and can we have it such, by allowing the blood to be exhausted by the demands made upon it to perfect the pustules? Certainly not. If we desire this fever to be vigorous, and the patient's condition not to become typhoid, we must sustain—I repeat we must sustain—the patient, and that most generously. A moment's reflection cannot bring us to any other

conclusion than that it is an outrage of common sense, an outrage upon the patient, and a violation of the plainest teachings of pathology, to withdraw food from, or to refuse to give it, with an unsparing hand, because a fever exists as a phenomenon of the development of pus, or the maturation of almost innumerable pustules. Do we not sustain well, in all other cases where pus is being developed to any large extent; and is not the practice justified by its results? Why, then, should we refuse generous dietetic support in that pustular disease in which, Watson says, as has already been remarked, quarts of pus are generated? No patient with confluent smallpox was, he felt confident, ever destroyed by a generous and abundant supply of food. He was equally as confident that many such now sleep the slumber of death because they were not vigorously sustained with food. The time for the management of grave cases of variola with water-gruel, toast-water, and panada, and for the secondary, or more properly the irritative fever, to be regarded as an opposing, a contraindicating phenomenon to the free introduction of food, is fast passing away. A better time for the poor, unfortunate smallpox patient is at hand.

Some one has said to-night that there had been no improvement in the treatment of smallpox since the days of Sydenham. He begged to be indulged in the declaration that this is not correct. In the days of Sydenham the starvation treatment, the gruel diet was the food, but, although this treatment is still too largely practised, he knew that it was not so universally followed as was the case a few years ago, and that there are those who, although they do not sustain their smallpox patients to the extent that he does, yet they repudiate the gruel and panada diet, and give food with a freedom that would appal Sydenham himself. The members are not unacquainted with the fact that his practice is not small, and that the field of his labors is in one of these localities in which Dr. Jewell has correctly stated that variola has been very prevalent. It cannot be that he should not have had a liberal percentage of these cases to treat, and yet he had but one case of death to occur, and that was a man whose habits were bad, and whose attack of confluent smallpox had been preceded but a few months by an attack of secondary syphilis.

Dr. Bell asked how many cases Dr. N. had seen in the late epidemic? Had he seen thirty?

Dr. N. could not say how many, but he presumed he had seen more; but this was a mere guess, as he had not any account of his cases at hand from which he could make any positive assertion as to their number. But he was confident as to having had but one fatal case during this epidemic.

Dr. Bell. Then the doctor has been more fortunate than any physician yet.

Dr. N. remarked that many of his cases were light, and required but little treatment. But as regards being more fortunate than any other physician, that, he presumed, might be accounted for by the other fact that but few sustained their smallpox patients as generously as he did.

Dr. Jewell. How many were confluent cases?

Dr. N. As far as he could now call to mind, five were such.

Dr. N. said he had found much relief to his patients, from the burning and itching of the face, to follow from the use of an ointment made of lard and

liquor sodæ chlorinata, in the proportions of one ounce of the lard to two drachms of the solution of the chlorinated soda. This he directs to be freely applied to the face at short intervals.

Dr. CARSON asked if he had employed glycerin.

Dr. N. He had not.

Dr. BURNS, after thirty-five years' experience, could fully agree with Dr. Nebinger. For many years, after the period of excitement had passed, he had stimulated freely. There is a great waste of vital fluid, and the patient requires sustaining. Hence he gave beef-tea, punch, etc. The last epidemic had been one of the most violent character, and required early and free nutrition, and with satisfactory results. For twelve years he had employed iodine externally. At the period when pustulation was commencing, he applied the tincture of iodine in its full strength, and then painted with collodion, repeating it every day. The inflammation is thus controlled, and the air is prevented from acting on the skin. Small pits are left, which, in a few months, disappear. He had tried it in a case on one hand, leaving the other naked, and there was a marked difference.

Dr. REMINGTON was happy in being able to add his testimony in favor of the stimulating nutritive treatment pursued in the advanced or suppurating stage of *confluent smallpox*, and so highly eulogized by our friend, Dr. Nebinger. He had been called upon to treat a most aggravated case in its confluent form, early last spring, occurring in a young man, aged about twenty years, and said to have been vaccinated some five years since, *homœopathically*. Hemorrhage from the bowels supervened on the twelfth day of the disease, which, in a few days, yielded to the *tinct. ferri chloridi*. This formidable case was also attended with *delirium, stupor, intense suffering*, great intumescence of face, and soreness of the scalp, with entire closure of the eyelids for a week or ten days. Circumscribed sloughs of the cutis appeared, and on the maturation of the pustules, which coalesced on the face, and formed a regular incrustation of half an inch in thickness, giving rise to an intolerable fetor, notwithstanding powerful disinfectants of *chlorinated soda* and glycerin were freely employed. There were positive symptoms of great prostration present, and this exhaustive drain, by so extensive a suppurating surface made on the powers of life, was compensated by the liberal exhibition of eggs, custards, jellies, with brandy, milk-punch, essence of beef, mush and milk, ice cream, and oysters.

The patient's eyes escaped unharmed, although his hair fell off, and his hearing was greatly impaired for some months. He had since learned that he had completely recovered from both these annoyances, and enjoys a full return of vigorous health.

It is quite evident to the practical observer that medicine has but a very limited control over this loathsome scourge, and therefore our chief duty consists in restricting its extension by interposing vaccination; employing moderate evacuants by salines in the commencement, a properly regulated, cooling regimen, and free ventilation, followed, in the advanced and suppurating stages, with a generous, nutritive, stimulating diet. * * * *

NOTE.

From March, 1861, to June, 1862—a period of sixteen months—I treated seventy-nine cases of variola. Of these, four proved fatal—one a male aged 35 years, the case referred to in the debate: the second was a girl of 15 years; her attack was of the confluent variety: the third a girl of 7 years; the form of the disease in her case was the discrete: the fourth was a babe of 18 months; its attack was confluent. Thus my statistics exhibit a mortality of 4 in 79 cases, or 1 in 19.75.

A. N.