

**An improvement in the pathology and treatment of small-pox : upon principles which are applicable to all sthenic diseases.**

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328 : Floriana W. H. Nightingale Esq.  
papa ??  
where are Peter's  
descriptions  
With the Author's regards

AN IMPROVEMENT  
IN THE  
PATHOLOGY AND TREATMENT  
OF  
SMALL-POX,  
UPON  
PRINCIPLES WHICH ARE APPLICABLE TO ALL  
STHENIC DISEASES.



BY  
ROBERT STEVENS, M.R.C.S. &c.



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INTRODUCTION

LONDON:

THOMAS CURSON HANSARD, PATERNOSTER ROW.



## INTRODUCTION.

THAT the writings of medical men are dry and uninteresting is a general complaint. It is true, that, in the science of medicine, there is no scope for incident and events, and I fear if the ideal and imaginative faculties, the chief grace of classical composition, were enlisted in the service of the medical philosopher, that he would forfeit his title to the name. I trust when the educated of the community are better acquainted with the data of our ratiocination, that they will as soon think of looking for light incident in the Elements of Euclid, as to expect such amusement in the writings of medical men, whose chief aim should be the elucidation of cause and effect. Incidents and events claim the chief attention of the lawyer; history and revelation that of the divine; whilst the physical sciences are almost exclusively necessary to the study of medicine. Whether an individual find amusement in the one or the other is completely a matter of taste. They who have brought this charge against us have done so

in obedience to their own mental constitution : but utility is the grand end. In all due humility I think no worse of this pamphlet, because the same charge has already been brought against it by some portion of the public press. I submit it to their further consideration.

*Kennington Common,*

Dec. 1838.



AN IMPROVEMENT  
IN THE  
PATHOLOGY AND TREATMENT  
OF  
SMALL-POX.

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THIS treatise on Small-pox was read before the royal medical and chirurgical society, in the beginning of the year 1837. But the subject being too abstruse to be caught at a glance, I am induced to place it before the world in a more tangible form, hoping that the principles of treatment, which are somewhat more radical than those in common use, may obtain the attention from my scientific brethren, of which they appear to be deserving from the manner in which they have stood the test of experience and practice in my own hands.

In preference to giving any sketch of my own, of the course, symptoms, and the usual principles of the treatment of Small-pox, I have taken the following passages from Dr. Mason Good's Study of Medicine.—(See page 113. vol. 3, 3rd. Edition.)

“The disease opens its battery with the usual signs of a febrile cold fit, accompanied with vomiting, and



some degree of soreness in the throat. About the fourth, sometimes on the third day, the eruption begins to appear on the face, neck, and breast, in minute flea-bite spots, which multiply every night for the ensuing four days, when there is usually a pretty full crop of them over every part of the body, though the face is, in almost all cases, far more covered than any other part; and that, according to Camper, in the proportion of five to one. The head, face, hands, and wherever else the pimples shew themselves, gradually swell, and the eyelids are often so much distended as to close the eyes and produce blindness; the spaces between the pimples are reddish, and continue to grow redder as the pimples become pustules and ripen: the fever is of the caumatic or inflammatory kind, and the suppuration is complete on the eighth day or thereabouts. On the eleventh, the inflammation and pustules manifestly abate, and the latter, measuring the diameter of a pea, dry away by degrees and scale off, and wholly disappear on the fourteenth or fifteenth day, with the exception of those on the extremities, which, as they come out later, commonly continue a short time longer."

"Such is the ordinary course, but the symptoms vary greatly in severity, according to the degree of fever and extent of the eruption, which, as already observed, hold a pretty accurate balance. Where the pimples are few and scattered, there is but very little indisposition; but where they are very numerous, though still distinct, the soreness, swelling, and febrile heat are very distressing.

"The grand principle in the treatment of Small-pox,



as of all other exanthems, is to moderate and keep under the fever; and, however the plans that have been most celebrated for their success may have varied in particular points, they have uniformly made this their pole-star; and have consisted in different modifications of fresh air, cold water, acid liquors, and purgative medicines: heat, cordials and other stimulants having been abundantly proved to be the most effectual means of exasperating the disease and endangering life."

There is no part of this description of Small-pox by Dr. Mason Good, which I should wish to criticise or to controvert, it being excellent as far as it goes: the treatment is simply anti-phlogistic. I build upon it, and take some facts, which are there glanced at, as the bases of important principles, but which I cannot introduce till I have examined some errors in the pathology which seem to be in very general acceptation, and which, so far from throwing any light upon the subject, have rather debarred any improvement in the treatment of the disease.

FIRSTLY, I must enter into the question, how far there is in certain persons a specific aptitude to a severe form of this disease. And in examining this and other points in the pathology, I will advance no opinion without giving the reasons for it.



Most writers upon Small-pox, syphilis, and other diseases which depend upon a specific virus, have remarked that in certain constitutions their ravages are greater and their symptoms more malignant than usual, and without trying to find out any cause for this unfortunate peculiarity, have rested quite satisfied that it is owing to an unaccountable and specific aptitude in the individual. This is a gratuitous opinion, and I think if my arguments against it have any soundness it will look very like a mischievous prejudice.

As Dr. Mason Good observes, the severity of the precursory symptoms and of the eventual disease, hold a pretty accurate balance. Now the precursory symptoms are febrile and excited action, in order to render the superficial tissues fit for the developement of the eruption. Can no reason be given why this febrile and excited action should be greater in one individual than another. Surely temperament and excitability, either temporary or otherwise, should not be put out of the question. This is the sole cause, though it may sometimes appear otherwise to a superficial observer. That there is a specific and *unaccountable* aptitude, is an unsupported opinion, and an idle attempt at rule and definition which is so baneful a prin-



ciple to the science of medicine. This notion at once closes the path of enquiry, whilst by adopting the opinion that excitability and temperament are the causes of occasional malignancy, it must be remembered that science and ingenuity can control excitability, and consequently the diseases it aggravates. This is a most valuable pathological basis.

It is to be remarked, that the most delicate persons are often the most susceptible, and liable to violent inflammatory excitement.

When Small-pox proves fatal, the immediate cause is, that typhoid symptoms and exhaustion of the nervous or functional power have supervened upon undue excitement, and where the fever has run very high, the patient being delicate and excitable, with little nervous or vital power, this has taken place even in consequence of the precursory fever, before the eruption is complete. In this case we usually have typhus with purple spots,\* which might always be prevented by controlling the excitement in the first instance by using decided measures. More frequently when small-pox proves fatal, it is at the latter part of the disease, exhaustion supervening upon the ex-

\* From relaxation of the exhalents and tenuity of the circulating fluids.



cessive inflammation which attends the supuration of a full eruption, just as in the case of an extensive burn or scald. The vital power is during these states of inflammatory excitement used up, or burnt out too quickly as it were. Its undue expenditure at first constitutes the severity of the precursory symptoms which is always followed by a full eruption ; and, withal, the patient is left the less capable of standing against the excessive inflammation which is sure to accompany the ripening of a full eruption. Therefore the grand opportunity is at the commencement of the disease, when by controlling the excitability, not only the nervous power will be kept in reserve, but a light form of small-pox will ensue.

I am not aware that any one has taken the trouble to account for the disposition to boils after the severe forms of small-pox. It appears to be quite a pathological curiosity. It is never a consequence of the benign form of small-pox, but always of the severe. I never knew a severe case of small-pox which was not followed by boils. It is caused by portions of the cutis and subjacent tissues which have lost their vitality from the severity of local inflammation ; these, like other foreign matter, excite the suppurative inflammation for their discharge



from the system. Some pathologists, actuated more by the meaning of words than by physical causation (a sure consequence of modern education), have attributed them to weakness, because, they say, they are cured by tonics and the returning strength. Others, again, have attempted to define a rule, and have proposed to characterise small-pox by this slough which forms at the bottom of the pustule ; and state that, it is not owing to the severity of inflammation, but to the particular kind of inflammation. Thus they adopt a perfectly useless complication of the pathology without either precedent or analogy.

The use of diaphoretic medicines has been very generally precluded, because they are said to cause a determination of blood to the skin. Now diaphoresis is always present during syncope, and as universally absent in inflammatory fever. Thus a beneficial measure is forbidden through an error in the physiology of diaphoresis.

The usual treatment of small-pox is antiphlogistic it is true, but the remedial intentions are not directed so much to the prevention as to the moderation of symptoms when they have established themselves: the pathology not having been deeply investigated, the treat-



ment is not sufficiently radical, under the idea that it will run its course, and that all that can be done is to moderate the fever.

The first change upon the system, after the introduction of the small-pox virus, is the production of fever; and this fever, as stated by Dr. Mason Good, is of the inflammatory type, the skin being hot, dry, and red. Now, the force of the cutaneous circulation and the fulness of the eruption are always in exact ratio, which accounts for the eruption being most plentiful on the face, according to Camper in the proportion of five to one.

When the virus has been taken into the system, it cannot propagate itself in any other way than by the reproduction of its own kind by pustular developement. After contagion, the circulating fluids contain (to express myself by a metaphor which exactly suits the purpose) the seed of the disease, or the matter of infection, and the superficial tissues are the proper and only soil for its developement; therefore, by lowering the circulation, the introduction of the seed into its proper soil is in a great measure prevented. This inflammatory state of the skin is the most prominent, as well as important, of the precursory symptoms, for inasmuch as it is the cause of the subsequent



severity, it is the symptom to be prehended for the mitigation of the disease.

Inflammatory fever and excitement in all shapes may be allayed more properly (and with equal facility) by diminishing the active powers of the circulation, than by taking away blood, which will be wanted afterwards to obviate the consequent depression. The tartrate of antimony is decidedly the best medicine for this purpose, for the force of the pulse can be commanded with it; though the skin be as red as scarlet it may be made as white as need be in ten minutes, and kept so for any necessary period, without producing even nausea, if the doses be properly adjusted, which certainly requires not only care but constant watching. For if a very small dose of mercury produce salivation, or one of tartarised antimony vomiting, the notion that the prior and minor effects of such remedies would be omitted, or jumped over is *not true*. It only shews a peculiar sensibility to the effects of the remedy, and that a much smaller dose or a milder preparation, would produce the proper curative effect.

By keeping down the cutaneous circulation, the appearance of the eruption is delayed for a time—but all this is completely in the control of the medical attendant, if he have any inge-



nulty ; and by giving calomel, or the blue pill with the tartrate of antimony, I have much reason to think this delay is beneficial, because it promotes the decomposition of the virus which is already in the system, in the manner I have pointed out with regard to mercury in syphilis, the *modus operandi* of which is as follows (See *Lancet*, vol. ii. 1836-7, p. 692) :—

“ Before nutrition takes place, decomposition of the nutritious matter contained in the arterial blood is effected, and a distribution of the elements in the required forms. Decomposition must also take place before its counterpart, absorption, can be effected; that is, cellular tissue and bone are not absorbed as cellular tissue and bone, but their elements, or new forms. On this principle we have a more rational theory of the *modus operandi* of mercury in syphilis, and in cutaneous diseases depending on a specific virus ;—by increasing that species of absorption which is the counterpart of nutrition (both governed by the distribution of the ganglial nerves), it promotes decomposition, and without purging it from the system, as generally conceived, forms innocuous compounds of the elements of the poisonous secretion.”

The treatment of the typhoid exhaustion which follows malignant small-pox is not always of a judicious kind. Arterial blood containing chyle is the proper stimulus to the cerebro-spinal system to supply functional or vital



power. In cases of exhaustion of the vis vitæ, it is too much the custom to give wine, brandy and water, &c., things which excite and are followed by a corresponding depression, whilst deposit of nourishment should be the object ; but if the thing have been taken in time, and there has been no detraction of substance, no powerful evacuants used, but, on the other hand, inflammatory excitement has been allayed by more scientific measures, there will, I am quite sure, be no necessity for administering stimulants in any case. If stimulants have ever succeeded, it is by their having excited the digestive organs to dispose properly of nourishment.

I do not pretend to have discovered a specific remedy for small-pox, but by examining the pathological principles, (which is the most legitimate method of discovery in medical science,) I have come at a mode of treatment which is more radically beneficial than that in common use.

There are two ways of proposing an antidote to a poison : the first is by a consideration of the chemical composition, with the view of lessening its activity, or of rendering it inert : but where this cannot be done, as in the case of the poisonous matter of specific diseases,



we have the alternative of opposing the effects produced upon the system ; and by scrutinising the order of effects, as I have done in the case of small-pox, more can be done than was dreamt of in the last century.

Let it be granted that vigour of the cutaneous circulation, constituting the caumatic precursory fever, is necessary to a full development of pustules, that is, that if there be much excitement with redness and heat of skin at the time of efflorescence the eruption will be full, and vice versa : this is the grand fact in the pathology.

There is generally a characteristic difference between a medical work written for the profession and one for the public ; the former dwells upon principles and the latter upon remedies, though many well-educated men, from their peculiar mental constitution, prefer experimentalizing on the effects of remedies, to troubling themselves about pathological principles, and this, because in their previous education, classical acquirements have been preferred to philosophical, the first being addressed to the imaginative and ideal faculties, the other to the reasoning powers. Now these two qualities of mind are somewhat opposed to one another when engaged upon *a priori*



reasoning upon medical subjects. Their result is hypothesis.

The remedies I have named, in themselves are simple enough, but in addition to the comprehension of the pathological principles which have suggested them, there is another point which is of equal importance, namely, that they are not to be administered because a certain individual has published their utility in a prescribed form, for they are already used in this manner: the same cause which makes the Small-pox-virus act with different energy in different constitutions also makes the remedies which are used act with different force in different persons, they must be given not in fixed and nameable doses, but till a certain effect is produced, which effect must be narrowly watched and adjusted according to circumstances.

I have spoken before (see page 13) of the extreme susceptibility in certain persons to the effects of remedies; but, on the other hand, as every body knows, it is sometimes necessary to give very large doses before even the minor effects are produced. I once found it necessary to push the Tartrate of Antimony, in a case of extreme excitement and delirium amounting to madness, as far as two grain



doses, having found less doses ineffectual, nor was nausea produced while the delirium lasted. In all cases, doses must be proportioned to the excitement as well as to the constitution, and this is only to be done by feeling one's way with them.

Surely any improvement in the treatment of this horrible disease must be acceptable; for although the protective influence of vaccination is very general, yet the small-pox continues to hold in dread, to brand, and to destroy.

The first remedial intentions are, simply to hold the force of the circulation in command and to keep it low. Now if this be done, and it can be done easily, it is *absolutely impossible* for a full eruption to take place: excitement is put out of the question and its worst consequence, typhoid sinking; thus all the bad effects are forestalled, and the patient experiences but very slight indisposition.

There is nothing inscrutable about this disease, it is governed by physical laws which are within the reach of human causation, but it is greatly to be lamented that the prejudice of the age is such that the mental faculties of causation are totally sacrificed during the whole period of youth and adolescence, (the most im-



portant time for the developement of the mind) to the classical and ideal accomplishments. The majority of medical men select standard opinions instead of judging for themselves, in truth many are not capable of judging for themselves. Their causation is abandoned the first time they have the sole responsibility of a dangerous case ; the habit of reasoning is given up just when it is most wanted : this is the effect of modern education ; the memory and the imagination are fostered to a remarkable extent by the study of languages and events, and when the powers of causation have been thus supplanted, the memory is made to acquire the verbiage of the laws of physics that the imagination may misapply them. It is to be hoped that these things will be better understood by the more practical members of the senate of the London University.



## C A S E S.

THE two CASES following, which occurred in the same family are taken from a number. They will render the principles of treatment more intelligible.

## FIRST CASE.

On the 26th of December, at 9 P.M., I was called to Mr. M\*\*\*\*\* H\*\*\*\*\*, and found him labouring under severe caumatic fever with slight delirium, and a full eruption (quite fresh) of small-pox, which proved to be as confluent a case as I ever witnessed. The bowels had been confined for two days, certainly. Pulse 130 : great jactitation.

Ordered three grains of Pulvis Antimonialis, with two of calomel to be taken directly, and a fourth part of the following mixture every two hours :

R : Magnesiae sulphatis ℥ij. Aquæ puræ ℥iiss.  
Tincturæ. Hyoscyami. ℥iij Vini antimonialis  
℥iij. M.

27th, 9 A.M. Found him composed. Bowels had been relieved copiously. Pulse small and 86. Slightly nauseated. Ordered an effervescing draught to be taken every three hours with Vini Antimonialis ℥ xv. et Tincturæ Hyoscyami.

28th. The patient quiet, the throat very sore. The draughts to be continued, with the use of a gargle.



29th. Bowels confined. Had had no sleep during the night. Pulse 90. Very uneasy. Doubled the dose of the Antimonial wine and the Tincture of Hyoscyamus, and added *Magnesiae sulphatis* ʒij.

30th. Had dozed a few hours during the night. Bowels not relieved. Ordered a black dose, and to be repeated if necessary. Medicine to be continued.

31st. Bowels had been relieved. Slept badly. Draughts to be continued with the addition of six drops of Battley's *Liq. Opii sedativus* to each. Black dose to be taken if necessary. The pustules, which were in the yellow or suppurative stage, were in large patches.

January 1st. Had slept several hours during the night, was quiet and rather low. Antimonial wine to be omitted. Draught to be taken every four hours with half a cup of strong beef-tea with isinglass intermediately.

2nd. Sulphate of magnesia omitted, otherwise medicine and diet the same.

3rd. Do. do.

4th. Better. Ordered the following :

R: *Acidi Citrici. Potassæ Carbonatis. aa. ʒiss. Tincturæ Gentianæ Comp. ʒss. Træ Opii. ʒxv. Aquæ puræ. ʒv. M.* Three table spoonfuls to be taken every four hours.

Diet improved—sat up a little while.

5th. Much better. Mixture continued without the opiate. He was quite well in a few days, and removed to his father's house on the 20th.



## SECOND CASE.

On the 27th January, during the evening, I was called to see Miss E \*\*\*\* H \*\*\*\* sister of the above, and determined for the first time to test the principles which I now publish. I took with me a saline mixture and two ounces of the antimonial wine in separate phials. I found her in bed, complaining of severe pain in the head and back, the face flushed, and the pulse strong and about 90. I stayed with her several hours, and succeeded in reducing the circulation, and the pain in the head and back were abated. I left proper directions for continuing the medicine during the rest of the night,—was with the patient early in the morning and administered the medicines myself. The heat, dryness, and redness of the skin were exchanged for a moist and rather pale one. The patient was seen continually. On the 31st of January, seven pustules had made their appearance, situated as follows :—One on the forehead near the right temple.—one on the left ear and cheek, on the point of the left shoulder, two on the sternum, and one on the left wrist. There might have been a few more on other parts of the body, but there was hardly any indisposition, and the young lady was quite well in a few days, during which time I took care to withhold every thing which would be likely to excite the circulation. For the last two years I have been able to accomplish these ends with much greater facility, the principles will speak for themselves. Should any public opportunity be afforded me for shewing the efficiency of these principles and means I shall be glad to avail myself of it.

I have another case which places the affair in a still



more instructive light, because from circumstances, I was obliged to leave the case, and an experiment in the treatment was thus instituted which I should not have felt justified in performing myself, if for my own satisfaction I had had any doubt or curiosity upon the subject, which I had not.

### THIRD CASE.

On the 5th of June, 1836, I was called to see William Mills *aged three years, the child of a poor gardener*, and found him covered with a very full eruption which had been out about three days, it proved to be a very confluent case of Small-pox, the weather was very hot, and their residence a hut, with only one room in it. I barely succeeded in saving the child's life by the most assiduous attention—the convalescence was very tedious.

### FOURTH CASE.

I have merely mentioned the above as case the precursor of the present one, for the infant in the same poor family aged one year, began to shew signs of indisposition on the 22nd of June, such as great fever, restlessness, &c. I commenced the following course of medicine:—

Rx. Pulv. Antimonialis.  $\text{℥ ss.}$  Hydrarg. submur.  
 $\text{℥ } \frac{1}{4}$  Potassæ sulphatis  $\text{℥ iv. ft.}$  Pulvis 2nda.  
quâque horâ sumendus, pro re nata.

The effect was watched constantly, and continued according to circumstances. On the 25th June two or three pimples made their appearance; on the 28th, there were about six or seven, which were progressing mildly. I was then obliged to give up the attendance for two days, and left proper directions with my assistant for continuing the medicine. When calling to see the child on the 1st of July, I was astonished to find it com-



pletely covered with the small-pox eruption. Upon enquiry, I found that a benevolent lady in the neighbourhood had sent a bottle of port wine for the use of the elder child, which was then in a state of slow convalescence: that the ignorant neighbours, with their usual kindness, had persuaded the mother to administer from time to time a tea spoonful of wine and water to the infant also—that this had produced excitement and a full eruption. Although this child is now running about deeply pitted and scarred, it is, without exception, the most satisfactory case I have to detail, not even excepting those in which the most desirable results crowned my assiduity, of which I have a number, and a few can be referred to. Moreover any person who may be inclined to satisfy himself as to the authenticity of the cases I have detailed, is at liberty to refer to my books, as well as to the families of the patients themselves. To give more cases would be but an useless repetition.

I trust that my investigation of the pathology will be considered to depend upon a sound system of medical reasoning—that its exemplification in the cases related, is such as will satisfy those who almost pride themselves upon looking to results alone, without previous argument, though I hope the majority of well informed persons allow medicine a place among inductive sciences. To all parties I submit myself with great respect.

LONDON:

THOMAS CURSON HANSARD, PATERNOSTER ROW.

