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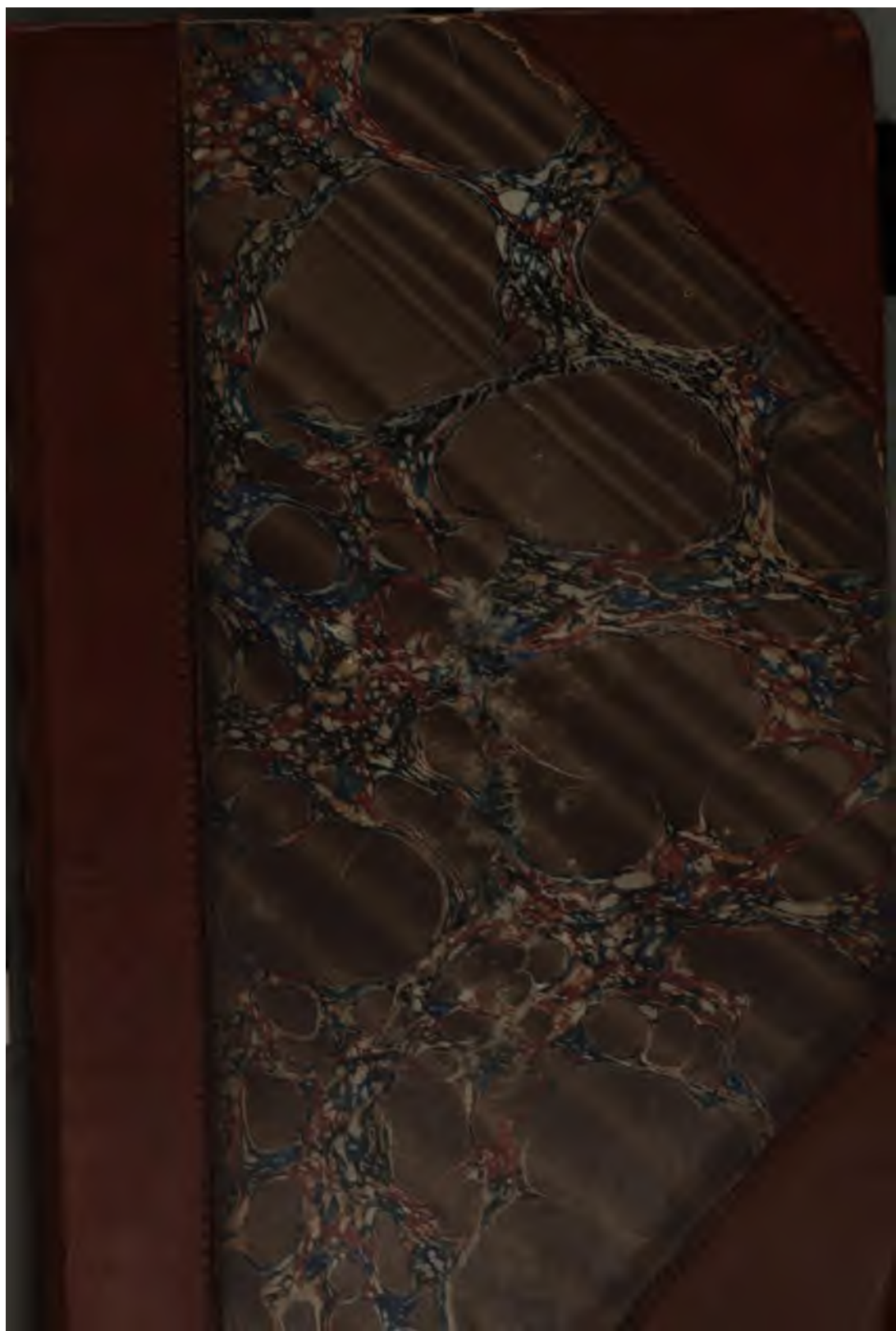
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1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is crucial for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to support effective decision-making.

3. The third part of the document focuses on the role of technology in data management and analysis. It discusses how modern software solutions can streamline data collection, storage, and reporting, thereby improving efficiency and accuracy.

4. The fourth part of the document addresses the challenges associated with data management, such as data quality, security, and privacy. It provides strategies to mitigate these risks and ensure that data is used responsibly and ethically.

5. The fifth part of the document concludes by summarizing the key findings and recommendations. It stresses the importance of ongoing monitoring and evaluation to ensure that data management practices remain effective and up-to-date.

6. The sixth part of the document provides a detailed overview of the data collection process, including the identification of data sources, the design of data collection instruments, and the implementation of data collection procedures.

7. The seventh part of the document discusses the various methods used for data analysis, such as descriptive statistics, inferential statistics, and qualitative analysis. It explains how these methods are used to interpret the data and draw meaningful conclusions.

8. The eighth part of the document focuses on the presentation of data, including the use of tables, charts, and graphs. It provides guidelines for creating clear and concise reports that effectively communicate the results of the data analysis.

9. The ninth part of the document discusses the importance of data security and privacy. It outlines the measures that should be taken to protect sensitive data from unauthorized access and ensure compliance with relevant regulations.

10. The tenth part of the document provides a final summary and concludes the report. It reiterates the key findings and emphasizes the need for continued attention to data management practices.

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OBSERVATIONS
ON THE
S M A L L - P O X
AND
INOCULATION.

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St. from Blish, Aug. 1916, fr 5/-

OBSERVATIONS
ON THE
SMALL-POX
AND
INOCULATION:

To which is prefixed

*A CRITICISM upon Dr. ROBERT WALKER's late PUBLI-
CATION on the SUBJECT,*

BY ALEXANDER ABERDOUR

SURGEON IN ALLOA.

Omnis homines qui sese audent præfere cæteris animalibus, summa opemiti decet, ac vitam
sientio transeant, veluti pecora, quæ natura, prena, atque ventri obedientia, finxit.

SALLUST.

EDINBURGH:

PRINTED FOR J. ELDER, No. 7. NORTH BRIDGE-STREET.

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INTRODUCTION.

It may perhaps seem surprising to engage in a subject that has been so often handled by the learned of the faculty. It would, however, be no difficult task to prove, that the subject is not sufficiently understood; and that the small-pox, of which I am about to treat, hath, for a series of ages, baffled the skill of the most eminent physicians, and still continues to spread its dire effects among mankind.

To what then are we to attribute the mortality arising from this disease? is it owing to its incurable nature; or are we to ascribe the cause to the imperfection of our art? The latter I will readily admit; but the former I cannot altogether reject.

Of all the publications I have read upon this disease, none have engaged my attention more than Baron Dimfdale's treatise on inoculation, and Dr. Walker's inquiry into the small-pox.

With regard to the former, I consider it as a plain simple narrative, that will alone hand down to posterity the Baron's name with credit and honour, and shews him to be a man possessed of uncommon candour and honesty, attention and genius.

With respect to Dr. Walker's inquiry, I allow it to possess many excellent observations, particularly the propriety of not inoculating when epidemical disorders are prevalent, such as the scarlatina anginosa ; his theory of pits depending upon an incrustation or condensation of the variolous matter in the pustules, impressing the cutis vera, in the same manner as a seal impresses melted wax ; and the cure by means of an unctuous mask, to keep out the external air. But, at the same time, the doctrine that is inculcated in different parts of

this work, abounds in contradictions and errors.

Of these I shall here take some notice :

In page 7th, the author says, " That seasons have their influence in modifying the small-pox, is beyond a doubt : a severe winter, which naturally promotes the phlogistic diathesis, cannot fail to produce small-pox more highly inflamed ; a hot summer and autumn readily dispose the animal frame, solids and fluids, into a more debilitated and resolved state. These very opposite seasons must occur in the same island." Compare the above with page 174. " Perhaps there is no one expedient more effectual in moderating the eruptive fever, or more useful and salutary in every stage of the disease, than the application of cool air;" and in page 176, he seems to agree in the following paragraph which is quoted from Sir George Baker : " That we can hardly err in pursuing the cold regimen. What can be a stronger confirmation of this, than the following fact related by the elder Dr. A. Monro ? " I have good

“ information, says he, of one hundred and
“ twelve people being inoculated in the middle
“ of winter in some of our most northern isles,
“ where there was scarce fuel enough to pre-
“ pare victuals, and many of the inoculated
“ went abroad bare-footed in snow and ice,
“ and yet not one of the whole number died.”
“ Let any one reflect,” adds Sir George, “ on
“ the situation of these poor people in that
“ northern climate, and almost destitute of
“ fuel in the depth of winter, (most probably
“ having had little or no preparation) and
“ yet all recovering from inoculation; and
“ then let him, if he can, defend the benefits
“ which arise from the warmth of a bed, from
“ nursing, and from cordials.”

Compare the first quotation with the two
last; and I appeal to the sense of any man, if
there be not a contradiction.

Can we suppose, that a severe winter will
produce small-pox more highly inflamed, and
yet the cold air is now allowed to be the very
best remedy in the disease.

When the Doctor says, " These two very
 " opposite seasons must occur in the same
 " island ;" I took this at first for a typo-
 graphical error, but not finding any correction
 among the other errors at the end of the book,
 I would ask the author, if he will find severe
 winters in Madeira, Barbadoes, and many
 other islands under the torrid zone.

His attack upon the truly great Sydenham,
 I consider unjust in several respects. He has
 said, that Sydenham considered the remote
 causes of diseases as incomprehensible and in-
 scrutible. The passage alluded to, I shall beg
 leave to quote and explain * : " *Causas illas*
 " *remotiores prorsus esse ἀκατάληπτες* ac inscru-
 " *tabiles ; solas vero proximas et conjunctas a*
 " *nobis posse cognosci, atque ab his solis indi-*
 " *cationes curativas esse mutuandas.*" " That
 " the more remote causes are altogether in-
 " comprehensible and unsearchable ; and that
 " only the immediate and concomitant causes
 " can be understood by us ; and from these
 " alone the indications of cure are to be
 " taken."

* Sydenham Op. Prefat. pagin. 23.

Here it is evident, that Sydenham does not say the remote, but only the more remote causes; besides, as a proof that Sydenham understood the subject, at least, as well as the Doctor; the latter is pleased afterwards to consider contagion as the remote cause,

Now, Sydenham does not deny this; on the contrary, in page 132, speaking of the small-pox that prevailed in the years 1667, 1668, and 1669, he says, “*Integras familias contagio suo adflantes nemini pareunt, cujus-
“ cunque demum ætatis is fuerit, nisi prius hoc
“ morbo laboraverit; neque tamen eximuntur
“ illi, quos adulterinum variolarum genus * ali-
“ quod, ad hunc morbum nihil adtinentium
“ prius obsederit.*” The disease “breathing
“ *its contagion* upon whole families, spared no
“ one, of whatever age he was, unless he had
“ previously had the disease; nor did those
“ escape who had been formerly seized with
“ a bastard kind of small-pox, quite foreign to
“ this disease.”

* By the “*adulterinum variolarum genus,*” I apprehend Sydenham means the chicken-pox.

After all, when Sydenham speaks of the more remote causes of diseases, he very probably means, that it is impossible to comprehend their nature. Thus, for instance, what is the particular nature of the contagion of the small-pox. All that Dr. Walker says is, that it is a specific contagion. This term may be applied to measles, chincough, dysentery, plague, and many other disorders. Waving this subject then, I would compare the nature of most of the remote causes of disease to Sir Isaac Newton's æther, or the chemist's phlogiston, and consider them as the dreams and visions of great men.

In page 15, he says, " That Sydenham has " been considered as the complete standard of " practice in this disease." It would have been obliging in the Doctor, had he mentioned any of those who considered Sydenham as the standard. It is beyond a doubt, that Sydenham in our island first laid the foundation of the antiphlogistic regimen in this disease, and that he first struck out a new path in defiance of vulgar prejudices. Since his time, however, practitioners have gone a greater

length than ever he did, and have not only exposed variolous patients, by removing the bed clothes, and opening the windows, but obliged them to be carried out into the open air, in very distressing circumstances ; and all this with manifest advantage.

In page 28, talking of contagion, he says, " We can induce the disease when we please by inoculation." That this does not always depend on our pleasure, many practitioners know the contrary ; besides, the Doctor contradicts himself, when he says, in page 102, " that while some children of a family are easily infected with the disease, it is impossible, by repeated trials, to convey it to others."

I presume, that the inference in page 74, related by Mr. Quier, is wrong, in supposing that the washing in cold water was prejudicial ; it is very probable, that the boy would have been better, though he had neither taken the P. Contrayerv. C. nor been put into the warm bath ; and we may naturally conclude, that upon the eruption being completed, the boy would have been well.

The experiments from 75 to 78, I consider as trifling, and apprehend, that the action of the variolous pus differs widely when tried upon inanimate matter, from what it does upon an animated body.

Page 150. " An early eruption of the variolous pimples, is a certain indication of a violent disease." This to me is by no means certain ; in general it happens in this manner, but I have seen several instances, where an early eruption was accompanied with a favourable disease.

Page 173, he says, " That when the eruptive fever runs high, it is impossible to keep the patient out of bed. This I deny ; and contend, that in order to effect a cure, the necessity of keeping the patient out of doors, by means of support, is the more urgent. Every one has not the conveniency of a large chamber, &c. ; this direction, therefore, will apply only to the rich. His cup of flummery, I consider highly improper, because hard of digestion.

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Page 182. " Yet many cafes have occurred
" where this falutary expedient has been abus-
" ed, and material injury done to infants of
" delicate habits, and even under the advan-
" tage of inoculation, by over-driving the cool
" regimen." And again, " It is certain, bad
" cafes fometimes occur under inoculation ;
" but where the eruptive fever is moderate,
" and the habit weakly, what good reason can
" be affigned for stripping children of their or-
" dinary apparel, keeping them half naked,
" without fire, &c.

" This is an injudicious application of a
" noble remedy, by which we protract both the
" fever and eruption, repel the small-pox from
" the furface."

Strange! to hear a medical man talk of cold
protracting the eruption, and repelling the
small-pox. Compare this with page 136 and
137, where he observes, that an early erup-
tion portends a bad difeafe, and a late erup-
tion a favourable one. I maintain, that the
cold air checks the variolous ferment, or what

he terms a morbid assimilation; consequently the disease is thereby lessened.

Page 183, " We may easily see how necessary and beneficial the mode of treatment laid down under the first indication may be; it is, however, obvious, no part of that treatment is calculated to answer the purposes of the second indication, viz. (to diminish the excess of the contagious fluids; and this I presume is a chief reason, why the mortality of small-pox continues the same, notwithstanding all the advantages of the cooling regimen."

I here again assert, that the Doctor is wrong; and contend, that the cooling regimen, observed in the strictest sense of the word, will not only prevent, but assist in diminishing the accumulation of the contagion. Baron Dimsdale, a man who, I believe, had much greater experience in this disease than the Doctor, was of this opinion, and accordingly has given an instance agreeable to my assertion.

Page 249. His fermented flummery, viz. fowens, though recommended by several of our Scotch Physicians, I consider neither good for man nor beast, apprehending that it contains little or no nourishment.

The formula of the bark, in 254, with elixir of vitriol, I consider as inelegant, and what few children will take.

Page 256. The practice of giving spirit of vitriol in ordinary drink, extolled by Sydenham, and recommended by Dr. Walker, is inferior, in my opinion, to the vegetable acid.

Page 292. I cannot bring myself to approve his tepid fomentations, in what he terms the crystalline small-pox, for very obvious reasons.

Page 335. His opinion about the propriety of abstaining from opiates in bad small-pox, I consider as futile; because I apprehend that opiates, by procuring sleep, or easing pain, tend to support the *vis vitæ*; and what

strengthens this opinion is, that if the pulse before was weaker, it becomes stronger by the exhibition of an opiate.

Page 354. I deny his first argument against the absorption of pus being the proximate cause of the secondary fever. " Had absorption in any degree taken place, we might expect a proportional depletion of the pustules within the above period." (viz. the commencement of the fever and some days after); " but this is not the case, either on the body or on the extremities; and before this time, the pustules on the face are so much incrusted, that little or no moisture can be absorbed from them. Besides, many small-pox cases occur where the secondary fever runs its course for some days, and terminates successfully, leaving the pustules on the body and extremities nearly in the same state they were in at the commencement of the fever, which shews it did not originate from the matter of the pustules being absorbed into the system." I apprehend, that previous to the incrustation of pustules, an absorption has taken place. " Besides, &c." I confess

that I never saw any such sort of small-pox, I have repeatedly seen a second crop of full matured pustules at the close of the secondary fever; but this is no objection to an absorption having taken place. On the contrary, where a great quantity of small pox has been generated, if we open the pustules on or shortly before the eighth day of the eruption, we shall find them full of matter; but upon the tenth day, or after, though to appearance full and white, they don't contain near so much matter as before; this to me is a proof of an absorption having taken place.

Page 355. Second argument. "The doctrine
 " of the absorption of the variolous pus from the
 " pustules into the blood, after it has been de-
 " posited in them for eight days, is contrary to
 " the common course and order of nature, as
 " it occurs in other cutaneous eruptions." I
 deny that the absorption is contrary to the
 order of nature, as in other diseases; in the
 very example of erysipelas, does it always ter-
 minate in resolution or exudation? I am very
 certain it does not. Here we frequently see
 blisters, which break, and sometimes small sup-

purations. With regard to the measles, we are ignorant whether they contain any matter or not ; consequently, to say any thing about them is absurd. I presume, that the diarrhœa, which occurs late in the disease, is a proof of an absorption. Besides, are we to expect an exact order or regularity in the symptoms of a violent and unmanageable disease ?

Page 357, “ But when the matter of internal abscesses is taken up by the lymphatic vessels, and transmitted into the system of circulating fluids, it cannot possibly remain there for any time, but it is commonly discharged by some of the excretory organs.” The facts following I believe to be true : what he advances in the *phthisis pulmonalis* is inconclusive ; here we often see a hectic fever continue a long time, which, I presume, is the consequence of a purulent absorption in the circulating system.

Page 361. His third argument, that where the fever occurs without an early diarrhœa, or other evacuations, and that a distention of the lymphatic and blood vessels must take place,

and consequently unfit for absorption, only implies, in my opinion, that the absorption has already taken place, and that the matter, by its stimulus, has induced the phlogistic diathesis.

Page 363. His fourth argument, "that the tenacity and consistence of the variolous pus "at that period," viz. the time of the secondary fever, "renders it improbable that it can "be received within the mouths of the ab- "sorbents." This argument is by no means probable, because, at this period, matter taken from an infected person, and dried, will serve for inoculation, and the disease will commonly take place.

Page 368. His notion of the origin of the secondary fever, is the same with his proximate cause of the disease, viz. "an excess of "contagious fluids still remaining in the sys- "tem." If this was true, there would be always a fever from the very first attack, till the eruption was gone; and though the pulse may be somewhat quicker than in ordinary health, during the interval of the two fevers, yet it may be remarked, that it is also weaker;

that, therefore, this quickness probably proceeds from a greater degree of debility being induced, and the exertions of nature endeavouring to throw off the disease; and notwithstanding his boasted discovery in page 344, I am afraid the disease contracted in the natural way, and if the proper treatment is not pursued in the beginning, will still continue to make its usual havoc among mankind.

Page 391. The Doctor's theory of pits I have allowed to be excellent; the incrustation of the pustules arises from exposure to the air; and this is the reason why pits are commonly confined to the face and hands. To obviate these, he applies a mask made of old fine cambric, thinly spread, with the following liniment:

R. Ol. Olivar. Opt. unc. iv.
Spermat. Cet.
Cer. alb. ana. unc. fs.

Linguescant simul leni igne et agitentur donec
refruxerint.

This mask he applies upon the seventh day, or upon observing a change of colour in the pustules of the face; renews it three or four times in the twenty-four hours; recommends it to be continued for ten or fifteen days, till the pustules are empty.

After all, would not the application of Florence oil, or oil of almonds, by means of a feather, used as often, and as long as the mask, answer the same end? If so, it would be much more convenient, and attended with much less trouble. This method is hinted by Dr. Home in his *Principia Medicinæ*, published some time ago.

Page 486. “ But it is equally certain,
“ where the assimilation has been moderate,
“ and of consequence the pustules few, there
“ is little or no danger of the contagious par-
“ ticles adhering in such quantities to the
“ clothes of servants, visitors or inoculators,
“ as will communicate the infection to others.”

To me this is by no means certain. I think I have seen a few instances directly contrary. I suppose the Doctor would not be

a little alarmed, if a servant of his, upon immediately coming from visiting a person having a moderate small-pox, should take a child of his own into his arms who had not had the disease.

Having now finished this criticism, I hope the Gentlemen Reviewers will excuse me for differing from them about the merits of Dr. Walker's inquiry, as my principal motive for doing so is to elucidate the truth.



OBSERVATIONS
ON THE
SMALL-POX
AND
INOCULATION.

Of the ORIGIN and HISTORY of the DISEASE.

OF all the diseases incident to mankind, perhaps there is no one at the commencement more under the controul and management of a judicious practitioner than the small-pox. If, however, he is called late in the disease, his utmost efforts will often prove fruitless and vain. ~~It has been a matter of surprize to me,~~ that men of the profession should continue to prescribe medicines in many cases of this dif-

case, when they know for certain, that their best endeavours will prove useless.

By this I would not be understood to mean practitioners who attempt to strike out a new path, but only those who pursue the beaten tract.

The first account we have of the disease is in the seventh century, by the Arabians. It seems, for a while, to have been confined to their country, though some physicians of late have entertained the opinion, that the disease has been known in the East Indies some thousand years. Probably this notion may have had its origin among the other extravagant assertions of the Chinese.

About the time I have mentioned, the Saracens extended their conquests through Syria, Egypt, Persia, and the Lesser Asia; it was then they spread this disease through these different countries.

In the eighth century they subdued Sicily, part of Naples and Spain; at which time the

disease was introduced into Europe. It was not, however, brought into this country till the 16th century.

To the Arabians or Saracens, therefore, we owe the small-pox. We, in our turn, transported it to North America ; the Spaniards to their possession in South America ; and the Dutch to their Islands in the East Indies.

Nothing remarkable in the treatment of this disease occurred till about a hundred and twenty years ago, when the cooling regimen was first introduced among us, and practised by Sydenham.

The period of inoculation I reserve to an after part of this treatise.

We now proceed to describe the symptoms.

The small-pox is commonly divided into the distinct and confluent kinds.

By the former is understood the pustules, or at least the greatest part of them, separated

...the mother ... the ... a ... a
number of ... the ... is ...
of the ... of the ...

In the ... the ... a ...
in ... having ... the ...
in some ... of ... : at
the same time are found in different parts of
the body, particularly in the head, ...
the ... and in the ...
frequently ... is also ...
and humor. If the patient ... his head, or
if the ... is ... a ... over his
body. Children have frequently ... and
sometimes ... That ...
ham has considered as the ... of the
eruption, and ... that if the patient is
seized with a fit the preceding evening, in the
morning following the small-pox will make
their appearance, and generally of a mild kind.
It is not to be doubted, that what Sydenham
has said in this respect, will be often verified ;
but in the course of my observation, I have
seen children attacked with fits which have
proved fatal ; in others, where, by means of
convulsions, a peculiar irritability was induced,

and some months after, death ensued. To the other symptoms may be added sneezing, and a coldness of the feet. About the close of the third day, or upon the fourth, the eruption makes its appearance about the size of pin-heads ; these gradually enlarge, and increase in number till the fifth day (counting from the commencement of the shivering), when the eruption commonly ceases, though some appear at times at a later period.

The pimples spread by degrees over the face, neck, breast, and the rest of the body. At this time, there is a pain felt in the throat, which increases as the pustules enlarge. The intermediate part of the skin, upon the eighth day from the first attack, instead of its natural colour, now becomes florid ; the face swells, particularly the eye-lids, so as often to shut up the eyes ; the uvula and tonsils are considerably inflamed ; there is likewise a swelling observable in the hands and fingers.

The pustules, which were before red and smooth, become now opaque and rougher to the touch ; these gradually grow more yellow

or white till the eleventh day, when the maturation is commonly completed, reckoning from the first symptom, or the eighth day from the appearance of the pustules.

At this time the swelling and inflammation of the face and hands begin to subside. The pustules have now acquired their utmost greatness, the size of which varies from the bigness of small shot to that of a large pea. They become gradually dry, and fall off. Most of them disappear by the fifteenth day, though some few continue to the twentieth, or later. The vestiges or marks remain, however, for a much longer period. By a warm regimen the patient is also affected with delirium, restlessness and fainting, which, however, abate upon exposure to the cold air.

The same symptoms aggravated, attend the *confluent small-pox*; the face sometimes presents the figure of two or three blisters half raised.

The pustules, in many parts of the body, are run together; it is chiefly on the belly where they put on the appearance of the distinct

kind. The patient is overwhelmed with sweatings. A diarrhoea sometimes precedes the eruption, and continues for a day or two, which seldom happens in the distinct sort. Counting from the first symptoms, about the end of the second, or beginning of the third day, the eruption shews itself; upon the fourth or fifth day, it is extensively spread, attended with very acute pains, sometimes in the side, at other times in the joints, or in the stomach, accompanied with much oppression and vomiting. The symptoms do not abate after the eruption is completed, like the distinct small-pox, but continue to torment the patient for several days. The fauces are considerably inflamed; a salivation takes place, accompanied with a hoarseness and cough, which sometimes continue through the whole course of the disease. The pustules on the eighth day often turn to a brownish colour; when this happens, they remain longer on the body; the more yellow they are, the less they are apt to flux, and the sooner they fall off. The fœtor which attends the distinct small-pox, is highly offensive in the confluent kind. When they are at the height, the fever is renewed with

violence. This is what is termed the *secondary fever*. Sometimes, in the beginning of the disease, there is a putrid tendency in the fluids; the mass of blood seems to be somewhat dissolved, and the capillary branches ruptured, as appears from the purplish spots termed *petechiæ*.

The disease is sometimes followed by abscesses or boils in different parts of the body, particularly near the joints of the extremities; as likewise inflammations, and other diseases of the eyes.

The following prognostics are the result of my observation.

Children in general suffer less by the small-pox than adults.

The distinct small-pox, in my opinion, may be always cured.

In the confluent kind, when the putrid tendency is great, when *petechiæ* are present before the fifth or sixth day, I consider death to be at hand.

Where abscesses or boils appear, though the patient is very low and weak, yet by a little attention he always recovers.

It was the observation of Sydenham, that when the pustules on the face are not numerous, at the same time distinct, the patient always recovers the disease: to this every attentive practitioner must give credit.

In the distinct small-pox, if a pustule fixes in the middle and inside of the cornea, it will be attended with the loss of the eye.

If a pustule arises immediately over the ductus ad nasum, the consequence is commonly a fistula lachrymalis.

The confluent small-pox on the face, that have the appearance of a blister before the cuticle is raised, or rather of a darker hue, are inevitably accompanied with death, upon the eighth, tenth or eleventh day of the eruption; at least in my practice, I never yet saw one recover.

Drowsiness, coma, aversion to food or medicine, and vomiting, in the confluent small-pox, generally prove mortal on or before the fourteenth day of the eruption.

Dr. F. Home, in his *Principia Medicinæ*, treating of the small-pox, asks, and answers the following question: “An methodus antiphlogistica vel in primo stadio usurpata, ulteriorem hujus morbi progressum impedire queat? Neque consentaneum videtur legibus naturæ æternis, neque praxi adhuc confirmatur.” “Can the antiphlogistic or specific plan adopted in the first stage, stop the progress of this disease? It neither appears consistent with the eternal laws of nature, nor is it as yet confirmed by practice.” Though the Doctor answers his question in the negative, I think we may say without hesitation, that it should have been reversed, as we shall afterwards attempt to prove. I don’t know what he means by the eternal laws of nature; but it is certainly consistent with common sense, to check, by every mean in our power, the progress of a violent disease.

I have already said, that in my opinion, the distinct small-pox of itself may be always cured; it surely then becomes a matter of the highest moment, to know the reason why one person should be seized with the confluent small-pox, and another with the distinct kind.

To answer this, several circumstances will contribute to occasion a distinct small-pox; but the principle one, is the proper application of cold during the eruptive fever.

I presume, that cold applied to the body checks the generation or progress of the variolous ferment, in the same manner as when cold is applied to fermenting wort or leavening bread, which stops, in a great measure, any more fermentation. As a proof of what I advance with regard to heat increasing the variolous matter, I have observed, that when a child lay with one cheek upon the soft warm breast of its nurse, that cheek had many more pustules than the other, that was exposed to the cold.

Dr. Cullen used to tell the case of a blacksmith, who was seized with a chilliness, and other incipient symptoms of the small-pox. He was desired to go to bed, which he did not, but leaned with his back against the wall, on the other side of which was his forge; the heat of which took off the chill. The consequence was, that he had ten times the number of pustules more on his back, than on the rest of his body. Dr. Home would say in this case, that a diversion was made to the back from the internal parts. Accordingly we find him ordering emollient fomentations previous to the eruption, with a view, as he expresses it, “*ut minor ad partes nobiliores, major ignobiliores materiæ variolæ fluxus fiat.*” “That there may be a less flow of variolous matter to the more noble parts, and a greater one to the more ignoble parts.” However plausible this theory may appear, daily experience contradicts it. Experience, that excellent schoolmistress, says, that heat, by increasing the action of the variolous ferment, will not fail to produce a numerous crop of pustules.

It is generally allowed, that acute or epidemical diseases have an influence in producing a malignant disease, such as measles and hooping cough. If this last disease is violent, and the patient in a weakly state should be attacked with the small-pox, he will be cut off early in the disease ; if, however, the cough is moderate, though the patient be weak, by paying an early attention to the antiphlogistic regimen, a distinct small-pox may be produced.

Passions of the mind have also their influence in contributing to a confluent disease, particularly fear. A bad habit of body and debaucheries, may be ranked under this class ; in short, whatever tends to weaken the body, will often produce a malignant distemper.

With regard to the cure of what is termed the natural small-pox, if I am called early in the disease (which by the bye seldom happens), I treat my patients in the following manner : If the weather is dry, I order them out of doors ; if it is wet, the door or windows of the apartment are opened ; the patient sits up

the greater part of the day without a fire; when in bed, the only covering I allow is a single sheet in summer, and the addition of a slight bed-cover during winter; when it can be easily obtained, a hair matras is preferable to a feather bed. It is of consequence to know if the patient is to take the small-pox; the only way to ascertain this is, to inquire into the nature of the prevailing epidemic, to examine if he has been in the way of infection, and if a child, to put the same queries to the parents; and upon turning out that the small-pox are in the country, and that the patient or friends have been visiting any person that has the infection, is now restless and feverish, attended with quick breathing, and coldness of the feet, we may infer, that he is about to take the small-pox. After thus exposing him to the cold air, it is proper also to give him cold water to drink, or if he prefers it, milk and water. By perseverance and attention to these circumstances, the fever will somewhat abate, or as I would say, the activity of the variolous ferment will be checked. We will often be obliged to change our patient's drinks. A person in sickness tires of every

thing. Good substitutes will be found in lemonade, tamarind beverage, or apple tea. Oranges may be freely used, if agreeable, through the whole disease. If these prove gently laxative, they will supersede the use of purgatives.

While the symptoms continue moderate, any medicine will be unnecessary; an attention to the cooling regimen is, therefore, particularly recommended. Many practitioners use and urge the propriety of tepid baths of water, or milk and water, in which they immerse the greater part of the bodies of children from five to fifteen minutes or more. This is done with a view to relax the skin, promote the eruption, relieve the pain of the head, and so on.

By this mean a revulsion and derivation was supposed to take place; and this presumption was supported by the swelling and enlargement of the sanguiferous vessels, to which the heat of the bath was applied. These practitioners imagined, that the vessels contained a greater quantity of blood than what they

should; and the good effects resulting from such application, in relieving violent headaches or colds, they thought was owing to the blood being drawn down to the vessels of the feet. But as the blood is constantly going round in a circle, the appearances of this derivation and revulsion are not confined to the part particularly immersed in the water, but the vessels of the temples, and the rest of the body, become distended in like manner. The fact is, the two great powers that distend our vessels, are, the pressure of the atmosphere, and the different changes made by the contained fluids. Now, if the effect of baths was confined to the relaxation of the vessels entirely, the quantity of blood remaining the same, and the whole vessels of the body were thus relaxed, they should appear rather more empty; and, therefore, their appearing distended, is a proof that some other change is induced by the application of heat, than merely relaxation. Perhaps it may be said, that a considerable absorption takes place, which increases the quantity of blood, and renders the vessels every where more full. But in proof that it is not owing to this, if dry heat is applied instead

of moist heat, the same effects will be produced.

Thus, if we fill a bladder about three-fourths full of air, upon applying it over a fire, in a short time it will appear to be quite full ; but upon growing cold, it diminishes to its former size. Or if we put a piece of iron into the fire, when red hot, it will be found to have increased its diameter considerably in length and breadth, which again contracts when cold.

If one holds his hands, for a short time, near the fire, the veins become enlarged.

The truth is, that the warm bath applied to the body may act by relaxation, but it certainly acts by rarefaction ; the air which exists in the blood in a sort of fixed state, comes to be unfixed, and to be greatly rarified ; the whole vessels of the body appear, and are really more full than they were before. From this view of the matter, it is obvious, that the application of heat will be proper where the circulation is languid, as in nervous headaches

The above dose may answer from one of twelve, to one of sixteen or eighteen years of age. This must be diminished or increased, as the patient is younger or older. Another symptom that is highly dangerous, is the fits. Several practitioners have recommended musk as a remedy. I have seen it tried, but never with success; the application of it, however, was not pushed to any great extent. For my own part, I decline using it, believing opium and asafoetida to be much more effectual remedies. My formula is the following :

R. Tinct. foetid, volatil. dr. ii.
Thebaïac. dr. i. Misce.

To children of two or three months old, I give from ten to fifteen drops, or more, in two tea spoonfuls of peppermint water; this is repeated every two, four, or six hours, as shall appear necessary. If the child is in the fit, it must be forced down its throat; indeed, with most children, we are obliged to use the strong arm in giving medicine. At the same time, we should rub the temples, the back, and the breast with any strong volatile alkaline

liquor, such as the eau de luce ; and though it should inflame or blister the skin a little, it need not be minded. It may perhaps be asked, that after insisting so much upon the antiphlogistic regimen in this disorder, why I advise the application of topical stimuli ? To this I answer, that there is no accounting for anomalous appearances ; that the symptom of fits is rather uncommon ; that in delicately sensible children, the disease is likely to overpower nature, by which, I presume, that the energy of the brain is diminished, and consequently the use of stimulants becomes necessary to assist nature. This method of treatment, however, applies only to pale weakly children. Where the child is plethoric, and of a full habit of body, our treatment must be quite the reverse ; in this case, we suppose, that there is an increased impetus of the blood vessels of the brain. We begin therefore by taking away a quantity from the temples or neck, by means of the lancet or leeches ; then plunge the child into cold water, or pour cold water on his head ; at the same time, keep the windows open, to admit the free air. When the child is out of the fit, the strictest atten-

tion is to be paid to the continuance of the cooling regimen.

Another troublesome symptom is the fore throat ; for this a gargle of an infusion of roses acidulated with elixir of vitriol, is commonly employed with very good effects ; but this remedy cannot be applied to children. In room of it I substitute the following linctus :

R. Conserv. Cynosbat.
Olei Amygdal. d. a. unc. ii.
Elixir vitriol. q. f. ad gratam
aciditatem misce. f. a.

Of this half a tea spoonfull or more may be given every two or three hours.

When the eruption is completed, and, few pustules appear on the face, any remedy is unnecessary. If, however, the disease proves violent, and a putrescent state of the fluids is present, which is marked by the offensive fœtor and great weakness, we must have recourse to wine and the Peruvian bark. I presume that wine is more serviceable by its an-

tiseptic and strengthening quality, than by its stimulant power. The kind of wine which I use, is either Sherry, Lisbon, or Madeira. The last, on account of its strength, requires more dilution than the other two. The form of sack whey, in my opinion, is most suitable. To make this, I take three parts of milk to one of wine, to which may be added a little sugar, if agreeable. This may be freely given, and as often as the patient inclines it ; it will serve the purpose of food and drink.

With regard to the bark, it is often difficult to throw in a sufficient quantity in children, especially in substance. The following formula is perhaps one of the best :

R. Extract. Glycyrrhiz. purificat. dr. ii.
Glycyrrhiz. in frustulis minutis, incisam, cum
aqua bulliente paulula in mortario contunde,
ad syrupi spissitudinem. Postea adde,

P. Cort. rub. ver. dr. ii.

Tinct. aromat.

Syrup. commun. aa. unc. fs.

Aq. Cinnam, simp. unc. i.

Fontan. unc. iv. Misce.

Of this mixture, I give from one to two table spoonfuls every hour, more or less, according to the age of the patient. Indeed I make it a point to throw in as much as the stomach will bear without vomiting. If a moderate purging follow, it is not to be checked; if severe, it may be moderated by the addition of a few drops of laudanum. I prefer the red bark to the pale, because I think it is a better stomachic than the latter; and is perhaps better suited to keep down the fever. Certain I am, that it is more effectual in the cure of intermittents, especially if combined with a tincture made from the *lignum quassia*. For instance, I have found it necessary to give an ounce of the genuine pale bark in fine powder, during the interval of a tertian fever, to stop the febrile attack; whereas half the quantity of the true red bark has produced the same effect.

After all, we will meet with patients who cannot take the bark in substance, though we have used different formulæ. To account for this, I am at a loss; but suspect that it often

proceeds from prejudice; when this is the case, we must have recourse to deception. Thus, I have known a man, who had so great an aversion to pork, that when tasting it, it would excite vomiting; yet the same person having a lean piece of pork fried, and covering it with the specious name of a veal cutlet, eat it without the smallest reluctance. I have known gentlemen on board of a ship, who, superior to prejudice, have eat rats, and assured me that they were as good as rabbits flesh; they did this at a time when they were in no want of the necessaries of life. I confess, however, that I was not prevailed upon to make the experiment. A Frenchman delights in frogs, which to an Englishman would be almost as bad as poison. These examples are sufficient to shew the power of prejudice. If, therefore, we can give our patient bark, so as not to know of his taking of it, it is not improbable but that it will be retained on his stomach. To children, the powder may be mixed in with gingerbread in the baking. I don't say that we will succeed in giving this to children reduced by the small-pox, for it is often im-

possible for them to take any solid substance whatever ; but to those who have any intermittent disorder, this form may be used.

Failing then in giving the bark in substance, we next have recourse to a liquid form. The following is what I generally use :

R. Extract. Cort. Peruv. dr. ii.
 Tinct. Peruv. unc. i.
 Decoct. ejusdem, unc. vi.
 Syr. Commun. unc. i. Misce.

To be given after the same manner as the former bark mixture. If children are averse to this, we must force them to take it ; after two or three trials in this manner, when they observe that we insist on our point, they will commonly take it afterwards with very good will.

After the pustules are all come out, and the fever abates, the patient is commonly pained, and very restless ; to obviate which, we have recourse to opiates, these, when sleep is pro-

cured, or even when pain alone is diminished, in my opinion are highly serviceable. The following may be given to a child, to the extent of one, two, or more tea spoonfuls every four or six hours, as may seem necessary :

R. Tinct. Theb. gut. xxiv.

Syr. Commun. unc. fs.

Aq. Cinnam. simp.

Pur. a. dr. vi. Misc.

But as costiveness is commonly the consequence after using opiates, (though I have observed the continued use of tinct. Thebaïac. in some few persons, as effectually laxative as the lenitive electuary), we remedy this by gentle purgatives or emollient glysters.

When the pustules are near the height, it is common for practitioners to apply blisters, with a view to evacuate part of the morbid matter.

Dr. Cullen recommends their application from the eighth to the eleventh day ; but I

have seen them to produce good effects long after this period, where the inflammation of the fauces was considerable.

In the treatment of the secondary fever, I begin with gentle laxatives, such as an infusion of fenna and tamarinds, or small doses of emetic tartar. I then have recourse to the bark, wine, vegetable acids and fruits. Bleeding at this period I never employ, conceiving that a putrid diathesis has already entered the system. I know that some practitioners use it, by which, say they, we draw off part of the offending matter. If the disease was applied to only one or two parts of the body I believe topical bleeding might be employed to advantage; but as it extends over the body, I consider the practice as only weakening the constitution, and hurrying the patient to his grave.

After a moderate disease, we will sometimes observe an inflammation in one or both eyes; sometimes specks or films will appear in the cornea. To remove the inflammation, it is proper to apply one or two leeches to the

temples ; if they are applied below the eye, an Ecchymosis is produced. To take off specks, I employ some of the sal Glauberi rubbed into powder, and blown into the eye twice a-day ; by which means they will disappear in a few days. If there is a determination of the variolous matter to the inside of the eye, the only attempt we can make to save it, is by blisters, setous, or issues. Still, however, with these there is but small chance of success.

With regard to diet, the most proper should be composed of vegetables and milk.

Thus I have related what I take to be the best method of treating the natural small-pox ; but the most effectual remedy to alleviate this disease is inoculation. With a view to render it universally successful, I shall give a short account of the practice, state and answer the objections that are commonly brought against it, in the following part.

Of the HISTORY and PRACTICE of INOCULATION.

DR. CULLEN conjectures, that inoculation has been known to the Bramins of Indostan some thousand years. If this was true, I cannot see why so useful a practice should be so long hid from Europe. About the close of the fifteenth century, Vasco discovered the way to the East Indies by the Cape of Good Hope. In our intercourse that followed soon after, it is not to be supposed that so useful a practice could have remained unknown to Europeans so late as the seventeenth century. If the Bramins are the inventors of the practice, we are ignorant of the time when it first began, or the motives that induced them to adopt it. It is probable, that observing the small-pox to be infectious, and that it was not so mortal in the coolest seasons of a sultry climate, they have been led to an artificial infection, or, in other words, to inoculate at these

times; and thus might introduce the practice, and an observation of the cooling regimen.

However this be, it is certain that the Circassians inoculated last century: Perhaps they learnt the practice from the Bramins. It was a custom with them to sell their women, who were noted for their beauty, to the Turks; and with a view to preserve their complexion, they underwent inoculation.

In 1673, a Grecian woman at Constantinople had inoculated a great number of persons. It was a practice in these eastern countries, the buying small-pox matter; and then it was rubbed on different parts of the body. This practice was frequent among the negroes born south of the line, where the disease was pretty fatal.

In 1713, six thousand persons had been inoculated in Constantinople; and about this time it came to be known in England. The Lady of Mr. Worsley our Ambassador, then wrote over to England an account of it. The fol-

lowing is an extract from one of her public
 letters, dated April 1717. " The small-pox, so
 " fatal and so general among us, is here en-
 " tirely harmless, by the invention of grafting,
 " which is the term they give it. There is a
 " set of old women who make it their busi-
 " ness to perform the operation every Autumn
 " in the month of September, when the great
 " heat is abated. People send to one another
 " to know if any of their family has a mind
 " to have the small-pox; they make parties for
 " this purpose; and when they are met, (com-
 " monly fifteen or sixteen together), the old
 " woman comes with a nutshell full of matter
 " of the best sort of small-pox, and asks what
 " vein you please to have opened. She imme-
 " diately rips open that you offer to her with
 " a large needle, (which gives you no more
 " pain than a common scratch), and puts into
 " the vein as much matter as can lie upon the
 " head of her needle, and after that binds up
 " the little wound with a hollow bit of shell;
 " and in this manner opens four or five veins.
 " The Grecians have commonly the supersti-
 " tion of opening one in the middle of the

“ forehead, one in each arm,
“ breast, to mark the sign of
“ this has a very ill effect, and
“ leaving little scars, and is not
“ that are not superstitious,
“ have them in the legs, or that
“ that is concealed. The children
“ patients play together all the
“ and are in perfect health to the
“ the fever begins, and they
“ two days, very seldom three
“ very rarely above twenty or
“ faces, which never marks; and
“ time they are as well as before.
“ Where they are wounded, there
“ ning sores during the distemper.
“ don't doubt is a great relief to
“ year thousands undergo this operation.
“ the French Ambassador says pleasanter
“ they take the small-pox here by way
“ version, as they take the waters in
“ countries. There is no example of any
“ that has died in it; and you may believe
“ am well satisfied of this experiment, since
“ intend to try it on my dear little son. I a

and the disease twice in the supposition appears to me, on the person's being the chicken-pox, and once

I infer that the same mis-where the patient has been

the objection made common-classes of people, and who disease as infectious, is, that nature to be the mean of and that when it comes then comes soon enough.

would only say, that life every mean for that providence relation; that in a dies, where- practitioners twenty-five dies, hundred. I apprehend rules after mention-

man, did not take it, for she had formerly contracted the small-pox. From this period, the Royal Family were inoculated; and though several circumstances occurred to retard its progress, it has gradually gained ground, and it is now a general practice throughout this kingdom.

In England, among the names of principal inoculators, those of Sutton and Dimsdale may be reckoned the foremost.

Sutton, though extremely illiterate, has done essential service, by ordering his patients abroad; but he learnt this practice from the Bramins in the East Indies. His practice, however, of purging through the whole course, is hurtful, as the bowels and constitution are apt to be injured by it.

Baron Dimsdale practised inoculation upwards of twenty years before he lost a patient, except one, whom he supposed to have died of a fever wholly independent of the small-pox.

It is now about feventy years fince inoculation was practifed in England, and fixty in Scotland ; and though it is now become general, ftill there are many individuals who will not permit inoculation ; and many objections are made to the practice, efppecially by the lower clafs of people in North Britain. To ftate thefe fhall be my next bufinefs.

Firft, then, it has been objected that inoculation does not infure againft the taking of the difeafe in the natural way. Accordingly it has been faid, that though fome have been inoculated, and had a number of puftules, yet they have afterwards had the natural fmall-pox. Agreeable to this, Van Swieten, treating of the fmall-pox, fays, “ I have by me fome letters from an Ambaffador, a man of great family, defcribing the whole courfe of an inoculated fmall-pox, and of another natural one which fucceeded it in two years, along with a diary of both diforders, written by two very able phyficians ; but the hiftory of thefe two diforders may be likewise feen in the work of the illuftrious Du Haen.”

Corresponding to this, there have a few instances occurred in the neighbourhood of the town where I at present practise, in which the patients were afterwards believed to be visited with the natural small-pox. These, however, did not come under my own immediate observation; and I very much suspect, that in all the above cases a mistake has been committed, apprehending that the one disease has been the chicken-pox, and the other the true small-pox.

In the inoculated small-pox, the true criterion, in my opinion, is to observe if there is a peculiar factor present at the time of, or previous to the maturation of the pustules; if this mark is not present, or if the pustules don't stand out the eighth day, I conclude that the patient has not had the small-pox, and that some chicken-pox matter has been used in the inoculation. If only one of the above marks is observable, I pronounce the patient secure from any future attack. Of the chicken-pox it may be noticed, that it is of short continuance, never dangerous, and requires no remedies. It has been observed by several very worthy men, that

some persons have had the disease twice in the natural way. This supposition appears to me to have been founded, on the person's being attacked once with the chicken-pox, and once with the small-pox. I infer that the same mistake has occurred where the patient has been inoculated.

Secondly, Another objection made commonly by the lower classes of people, and who do not consider the disease as infectious, is, that it is contrary to nature to be the mean of bringing on a disease ; and that when it comes of its own accord, it then comes soon enough.

To such good people, I would only say, that it is certainly allowed us to use every mean for alleviating a cruel disease ; that providence smiles upon the practice of inoculation ; that in the natural small-pox, one in ten dies, whereas in the inoculated small-pox, practitioners have calculated that one in seventy-five dies, others say only one in a hundred. I apprehend, however, that if the rules after mention-

ed be attended to, all may recover by inoculation.

Thirdly, It has been said, that in the small-pox contracted naturally, where there are a great number of pustules, the constitution is supposed to be freed of some load. So it has been observed that scrophulous persons have had their fores dried up for a number of months after the small-pox ; from which it was inferred that the danger of the hereditary disease was lessened.

It may be remarked, however, that the relief is only temporary, and as it were a cessation of hostilities, the scrophula after a certain period returning with its usual violence. But the proper answer to this objection is, that the small-pox is not a disease that naturally attends the constitution of man, and does not arise spontaneously in all countries. Three hundred years ago, the disease was unknown in this country ; our forefathers before that period knew no small-pox ; it was received by importation and infection.

Fourthly, It has been said, that the bills of mortality have not decreased since the introduction of inoculation. Allowing this to be the case, the reason is obvious: the small-pox used to be in a town only once in two or three years, whereas now it is hardly ever absent. This arises from partial inoculations.

Fifthly, It has been objected to inoculate when the natural small-pox was present in a place, upon the supposition that the disease caught by infection, and that produced by inoculation, might occasion a violent disease. To this objection, I would relate the following facts:

Several years ago, in Edinburgh, the natural small-pox made a dreadful havoc, in consequence of which a consultation was held by the physicians, and the question put, whether or not the remaining few who had escaped the disease should be inoculated? It was resolved in the affirmative; and they turned out very favourably.

In the late war, when Savannah in Georgia was belieged by Count D'Estaing, the French troops at that time had the small-pox among them ; soon after their arrival, the besieged received the infection, and died daily of the natural disease. Inoculation soon became general ; and the persons upon whom it was tried underwent a mild disease.

Sixtly, Suppose the operation has been performed, infection does not always follow at the time ; consequently the patient may take the disease afterwards in the natural way. This is true ; and several instances have occurred to support this fact. In order to remedy it, I would recommend perseverance in the repetition of the operation. I know a practitioner who inoculated a child of his own eight different times, and did not take the disease till the last time, which, however, was crowned with success,

In order to succeed in inoculation, there are seven things to be considered,

- 1st, The necessary preparation.
- 2^{dly}, The habit of body.
- 3^{dly}, The season of the year.
- 4^{thly}, The age of the patient.
- 5^{thly}, The regimen before and during the disease.
- 6^{thly}, The choice of matter.
- 7^{thly}, The method of performing the operation, and its effects.

We shall consider these in their order.

First, then, the preparation. This has afforded an ample field for quackery. Most of the medicines used have been chiefly preparations of mercury and antimony, as appears from their effects; and they are likewise pretty well known. The common preparative powder consists of,

Merc. dulc. ppt. gr. x.
Magnes. alb. dr. iii.
Cinnabar. factit. dr. i. Misce.

Others used a grey powder compounded of

Merc. dulc. ppt. scr. i.
Magnes. alb. dr. iii.
Æthiop. mineral. scr. i. Misce.

Of either of these powders, a proper dose used to be given every fourth night ; and the morning following, a dose of salts. Thus, the first dose we shall suppose, is given on Sunday evening ; on Monday morning a dose of salts is taken ; another dose of the powder is taken on Wednesday evening, followed by a dose of salts on Thursday morning ; on next Sunday evening, the powder again, and on Monday another dose of salts ; either the same day or the one following the patient was inoculated. So, in about eight days from the time the patient gets the first dose of salts, he is inoculated.

In strong and robust constitutions, and of a plethoric habit of body, such preparation may do good ; but in delicate and weakly persons it is pernicious ; independent of affecting the mouth by means of mercury, it cannot fail in occasioning a confluent small-pox.

Baron Dimfdale orders a powder composed of

Merc. dulc. ppt. gr. viii.

Pulv. e Chel. C. comp. gr. viii.

Tart. Emet. gr. $\frac{1}{8}$ Misce.

This powder is given after the same manner, in a little fyrup or gelly, followed next morning by salts.

Such preparation, however, I consider in general to be unnecessary.

In this country, there are few persons who have not had the disease before arriving at the years of discretion. Our subjects, therefore, for inoculation will be chiefly children. What

I commonly give, is three or four doses of calomel, merely as alteratives ; that to a child from six to ten months old, I give half a grain of calomel, with a small proportion of magnesia every other night : after giving the third dose, in the morning following, the child gets an infusion of fenna and manna. The next day I inoculate ; and before the child sickens, two more such doses are given. To older children, I increase the dose to one or two grains, but seldom venture beyond three, without I have a suspicion of worms lodged in the primæ viæ.

Some practitioners use a medicine composed of Kermes's mineral, aloes and camphor, formed into pills, and given every night from the inoculation till the patient sickens, only intermitting the days in which the purging salts are taken.

Of this medicine I cannot say much, having never used it ; but I do not see how it is useful for checking the virulence of the disease : indeed of the small doses of calomel,

which I use as alteratives, must add, that they are given oftener as a placebo; because parents or relations, I apprehend, would consider me very inattentive, if their children were not prepared.

Secondly, The habit of body comes next to be considered. By this, I mean, such a state of the body as is proper for undergoing inoculation. There are two states which seem to me to be improper for the operation, viz. the inflammatory and putrid diathesis. The former is marked by a plethora, a quick strong pulse, a highly florid complexion, and sometimes a bleeding at the nose. The latter is pointed out by a great desire for acids, a loathing of animal food, an inclination for vegetables, a want of coagulation, or resolution in the texture of the blood. Add to these, an offensive foetor, a fetid breath, a disposition to sweat, and a pale wan colour.

When either one or other of these states is present, it is improper to inoculate. How they

are to be corrected, may be learnt afterwards from the regimen.

Under this head I choose to add, that the absence of acute or epidemical diseases is necessary, such as fevers, measles, scarlatina anginosa, chincough, and others.

If, however, the chincough, or whooping cough, as it is sometimes termed, should happen to be in a town at the same time with the natural small-pox, and the party concerned is under the necessity of remaining in the town, provided the chincough is moderate, he may be inoculated; no risk can follow upon the supposition of having caught the infection in the natural way, and that an accumulated disease will be produced by the inoculation; with the ignorant however, it will look suspicious. Our surest plan, therefore, will be not to inoculate our patient for the present, if he cannot leave the town.

Thirdly, The season of the year. Many inoculators now a-days pay little attention to

the season in which the operation should be performed. In warm summers, especially during the dog days, I think it improper, because excessive heat, along with the variolous matter, may occasion a putrescent tendency in the fluids. I therefore presume that nothing can justify the performance of the operation; but the presence of the natural small-pox in the place. It may be asked, how come the Bramins to inoculate with success in such a warm country as India? To this I answer, that they carry the cooling regimen to a much greater length than we do, or would be allowed to do by the parents or relations. Of this I shall take more particular notice under the regimen.

It was formerly disputed, whether the Spring or Autumn was to be preferred. The advantage of the Spring is this, that should the patients have an indifferent recovery, they have the Summer before them. But our fluids are more afloat at that time; so that the advantage of the Spring over the Autumn is not so great as has been imagined.

Of all the seasons for inoculation, I would give the preference to Winter, though it may be done at any time when the air is cool.

Fourthly, The age of the patient. The most celebrated practitioners have differed in this point. Some prefer the early periods of infancy, while others wait till dentition is over.

The objections against inoculating children of three, four, five months old or more, are chiefly these :

First, Such children cannot tell their own complaints. But there is no disease which we can manage so well ; though our patient be dumb, we can judge pretty well from the appearance ; so this objection is of no consequence.

Secondly, The danger of teething. This is commonly a very great bug-bear, and a number of children have been lost from delaying the inoculation for fear of the teething. But the first teething is commonly easy ; and where

the inoculation is delayed on this account, a number are seized with, and die in the natural small-pox during this period. I have frequently inoculated children, who, in the course of the disease, cut some of their grinders, and that without any inconvenience. It must be confessed, however, that some children suffer, and even die under difficult dentition. To ascertain the propriety of inoculation, it is prudent to examine the child's mouth, to question the mother if she has had children before, and if they suffered in their teething, and to act accordingly. What I generally do in this case, is either to inoculate before the fourth or fifth month, or as there is commonly an interval between getting the dentes incisivi and molares, I embrace this opportunity. Children who are late in getting teeth, commonly suffer more than those who have them early. However, this rule does not always hold.

Although the child we have inoculated should do well, and should afterwards die of teething or any other accidental disease, there will not be found wanting, persons who will calumni-

ously assert, that the cause of death originated in the small-pox.

Another objection, and the strongest, is, that the disease is more mortal in young children, and that they are frequently seized with convulsive fits. In general, however, children bear these fits tolerably well ; and it is not uncommon for young children that are inoculated to take these fits, which however disappear upon the first appearance of the eruption ; and that more may die when they are very young, is not to be doubted ; for children are then more liable to accidental diseases, which destroy a great number of them : So more children die of accidental diseases before they are a twelvemonth old, than after that period ; and suppose the child should be seized with any of them after inoculation and die, the small-pox gets the blame.

The advantages of early inoculation, are chiefly these : The child is perfectly free from fear, which is of no small consequence in the cure ; an adult does not recover so well, and

chiefly from this cause. A young child sleeps a great deal, which is useful. The child too is confined to one sort of food, which is also useful here, and continues to take it, notwithstanding it is greatly distressed, seldom refusing the breast; and the habit of body is looked upon by Huxham, Mead and others, as being better then than it is ever after; nay, a young child resists the infection more at that time than afterwards.

I have observed in very young children, the inflammation in the arms to run very high, and not a dozen of pustules over the whole body. It may be observed likewise, that it is very seldom possible to communicate the infection to new born infants; so that it is generally weeks after they are born before inoculation will take place. What is the cause of this, I will not pretend to determine; perhaps the absorbent vessels are not then so well fitted for performing their office. It cannot be denied, however, that the disease has been seen on new-born infants; but these instances rarely occur.

Doctor Cullen thinks two years of age the best time for inoculation. Baron Dimisdale is of the same opinion. Van Swieten delays it till four. Dimisdale says, " That young children have usually a larger share of pustules from inoculation, than those who are advanced a little farther in life." This, however, is contrary to my observation. Where one young child has a numerous quantity of pustules, there are two of those who are more advanced in years, that will be affected in the same way. If children live in a retired part of the country, and parents pay attention to avoid infection, by having little communication with their neighbours, the inoculation may be delayed till two or four years of age. But with regard to those who live in great towns, it is a great risk to delay the operation; for ten to one but they will have the small-pox in the natural way before this period. Besides, it is common for children to be exposed to the air, and to go out with the disease upon them; add to this, the inattention and carelessness of nurses or servants; a danger

arises of communicating the distemper to every child that is near them.

Fistly, The regimen previous to and during the course of the disease. With regard to diet in young children, any thing on this head is unnecessary. The breast commonly supplies all their wants; if, however, they are used to spoon meats, such as bread and milk, light broths with bread, they may be continued; as to oat-meal porridge, I consider them as too heating for children at any time, more especially at the approach of an inflammatory disease. The universal practice of Scotland, however, is against me in this respect; and it must be allowed that custom becomes a second nature. I am notwithstanding, disposed to think, that porridge undergoes a kind of fermentation in the stomach previous to digestion; and this may excite a great degree of heat. If this is true, we may account for the reason why a child becomes costive upon taking bread and milk; yet upon taking porridge and milk, the same child shall be open enough in the belly. To those who are more advanced in years, a

regimen becomes necessary; and even the nurses of very young children should adhere to it.

I think it proper to reduce the patient, if in high health, by an abstinence from animal food, butter and cheese.

Broth, in which vegetables abound, may be taken without pepper. The patient should live upon tea, coffee, chocolate, milk, gruels, rice, light puddings, and vegetables of all kinds, if agreeable.

This regimen will also apply to those who are low in the body, or who may have, what I have called, the putrid diathesis; but in order to promote digestion, a moderate quantity of wine may be allowed; this regimen should be observed by them for weeks, or even months before inoculation. If we find afterwards that their habit of body is restored to health, that their complexion is improved, that the skin of their body which was before loose and flabby, is now firm, we may then inoculate with safety,

The Bramins in the East Indies forbid flesh, fish, butter, and milk: they order their patients to leave off their richest food, and expose them to the cold air night and day in passages, and throw cold water twice a-day over their bodies, till they sicken; and after this it is continued, though the pustules should abound. I am told that it is become a practice in Germany, to plunge the patients into cold water. It was the practice of the Arabians also to keep their patients cool, to give the coolest acid diet, as fruits; to these they added Ice water, with a view to cool them as much as possible.

A stronger proof of the good effects of cold air cannot be had, than the following in the natural small-pox. In the year 1731, a remarkable fire happened at Blandford in England, while an hundred and fifty of the inhabitants were ill of the small-pox; so that they were obliged to expose them to the cold air under a bridge, where many of them remain-

ed days and nights, and only one died of the distemper.

In paying attention to the cooling regimen, practitioners begin about the approach of the fever. This, however, is not soon enough with me; whenever I perceive the arm to be inflamed, I think it is high time to check the variolous ferment, and immediately enjoin a strict observance of the regimen; if the child has slept before in the same bed with its mother and father, I desire the latter to quit it. If the child has before worn two flannel petticoats, one of them must be taken off; and if used to be washed, or plunged into cold water twice a-day, the same ought not to be neglected. The patient should be often out of doors, and drink cold water daily, till the fever is gone, when, if few pustules appear on the face, this regimen and medicine become unnecessary.

It is easy for a surgeon to prescribe rules; but I find no small difficulty in the execution

of them. Thus, I have repeatedly ordered the fire of the apartment to be extinguished, and the windows to be opened, which were executed in my presence; but upon calling an hour after, the windows were down, and another fire put on. It is from want of attention to these and similar circumstances, that death sometimes attends inoculation.

Sixtly, The choice of matter. This was long a great bug-bear, for fear of taking it from a bad small-pox, or from a person who had some secret distemper, which might be communicated to the child. It is very proper to take the matter from a healthy child, whose parents are free from any hereditary distemper, and, at the same time, from a favourable small-pox. This will keep off all reflections. As every mother wishes to have a choice of matter, surgeons, more especially young practitioners, should attend to this. After all, there is not so much in regard to the matter, as has been generally supposed. An instance has occurred of twenty-two persons being in-

oculated from a confluent small-pox, of which the person died, and all the twenty-two recovered, and did well. I myself have repeatedly seen persons who were inoculated from a confluent small-pox, of which the patient died, and the inoculation was attended with success. In the London hospitals, no attention is paid to the matter, whether it be taken from a distinct or a confluent small-pox. Instances likewise occur where the infection has been caught in the natural way, from a confluent small-pox, and a distinct kind has followed, and did well, though death was the consequence of the confluent disease; so that more seems to depend upon the habit of the body, than upon the particular kind of small-pox. We have likewise instances of children that have been inoculated with matter, taken from diseased patients, though it was not known till afterwards, as the lues venerea and itch; and the small-pox alone was communicated. The former distemper I consider as a local disease; if, therefore, matter should be taken from the part affected, there is not a doubt but the lues-

veneréa may be produced by inoculation. Thus, if a portion of the matter of a Gonorrhœa be taken from one on the point of a probe, and applied to the urethra of a person who has not the disease, the consequence will be, that that person will be affected with a Gonorrhœa. But yet the blood in this disease or the itch is not infectious; therefore it cannot be communicated with the variolous matter, applied in the way of inoculation. Scrophula may be ranked under this class; nay the small-pox itself cannot be inoculated from the blood; and with regard to the measles, it is improbable that we shall ever succeed in the way of inoculation.

In order to remove every scruple, however, it is right to take the matter from a sound child, and from a favourable small-pox; and it is not difficult to obtain such matter.

The way to take off matter, is to puncture a pustule with a lancet, with the flat side of which, near the point, we press out the mat-

ter, and in order that it may not be rubbed off by the scales of the lancet, we insert a little paper between them and the unpolished part of the blade.

If matter is at hand, I generally inoculate with the matter alone on the lancet. But as this does not always happen, and as at times, it may be necessary to inoculate a great number at once, instead of having the matter upon several lancets, I prefer having a quantity of it upon a cotton thread. After making a small opening in a number of pustules, with a needle or lancet, to these we apply a cotton thread of the thickness of common twine, by which the matter will be absorbed. If we are not to inoculate immediately after, we put up the thread in a phial, previously moistened with a very little water.

It has been an object of inquiry, whether we should use matter when it is recent, or if it will answer when it is some time kept. Dimf-dale, Sutton, and his followers prefer fluid

recent matter. The Suttonians choose it before it has undergone any suppuratory course. This, with me, is a matter of very little moment, as I find inoculation to be attended with the same success, when taking matter before, at the time of, or after the maturation of pustules. I do not apprehend that the matter acquires, by keeping, any particular acrimony or virulence; but as I have sometimes failed in the operation with old matter, I seldom use it when it is above two or three weeks old.

The Bramins, however, keep the matter from one year to another; and after it has been kept two years, it will communicate the small-pox.

Lastly, With regard to the method of performing the operation: This has varied at different times.

The method practised by the Grecian women has been already noticed in Lady Mary Montague's letter.

The manner which the Chinese adopt, is to lick up some matter with cotton, and apply a doffel of this into each nostril ; here a large quantity of matter is introduced, and the practice is attended with the same success as our method.

When inoculation was first introduced into this country, it was common to inoculate in two or three different places, as in both arms, or in both legs, or in a leg and an arm ; and after making deep incisions, a piece of lint or thread soaked in matter, was introduced. This excited a high degree of inflammation, and occasioned foul and deep ulcers, which were troublesome ; it was believed that they were useful, upon the supposition that a drain was prepared for drawing off all bad humours ; but this is inconvenient and troublesome, and in young children it may be hurtful, by wasting the part.

The practice at present is, to scratch the cuticle about the tenth part of an inch, with a

lancet dipt in the matter; and after stretching the little wound afunder, with two fingers, we rub off the matter by preffing down the flat side of the lancet.

In making the scratch, though we wound the cutis vera, it is of no consequence; some practitioners think that it is necessary to draw blood in order to insure success. After making one scratch, we make a second, because it sometimes happens that the operation will succeed in the one, when it does not in the other.

The place where the operation is commonly performed, is in that part of the arm where issues are made, nearly over the insertion of the deltoid muscle. As scars remain behind it, it is done there as being a part not exposed to view.

When I have a number to inoculate, I always take a cotton thread. After making the two scratches, I apply part of the thread dipt in matter, equal in size to the wound, or ra-

ther larger, pressing it with the blunt end of my probe for about half a minute; then secure it there with a bit of sticking plaster. I then repeat the operation in the second scratch.

It is usual, after the second or third day of the operation, to observe a slight yellow tinge at the part. On the fourth and fifth day, a hardness may be felt upon touching; in the middle of the wound, a slight vesicle appears; the surrounding teguments seem to be somewhat puckered; add to this an itching and slight inflammation. About the sixth or seventh day, some pain and stiffness is felt in the axilla; this symptom is considered by Baron Dimfdale as the forerunner of the eruptive symptoms, and as a sign of a favourable progress of the disease. This I believe to be a good general rule; but at times practitioners find that it does not always hold. At the end of the seventh, or commonly about the eighth, the fever, accompanied with the usual train of symptoms, comes on.

The inflammation of the arm is considerably enlarged, nearly about the size of a sixpence; from the tenth to the twelfth, it is often as large as a shilling, or half-a-crown, and sometimes extending over half the arm. If the eruption does not precede this last appearance on the arm, it portends a favourable disease, and that all danger is over.

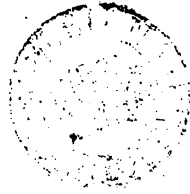
If however the arm is not inflamed in the least by the fifth or sixth day, we may conclude that either the infection will not take place, or that the variolous matter is lurking in the constitution, about to make its appearance in a very formidable manner. To prevent this, I inoculate my patient again, and give a dose of calomel, so as to occasion two, or at most three stools; by this the circulation is quickened, and perhaps nature is assisted in throwing out the morbid matter. That this happens, I infer, by observing that the inflammation in the arm takes place in a few days afterwards.

Previous to the eruption, there is sometimes a rash resembling an erysipelas, beginning first on the inoculated arm, and extending afterwards over the rest of the body; the fever and other symptoms are not however thereby increased; and when the small pox begin to distinguish themselves, this rash commonly disappears. Some practitioners have noticed a rash, accompanied with petechiæ, a great prostration of strength, and other putrid symptoms; but this kind has never come under my observation from inoculation.

Thus I have made some remarks on the small-pox. To the judicious experienced practitioner, they will be unnecessary. I would only say to him, with Virgil, "Forfan et hæc olim meminisse juvabit". To the younger part of the profession, I hope, however, they will prove useful. I would add, that if a proper attention is paid to what is recommended, inoculation might be always successful; at least, however, this has been the case in my practice. It is well known, that down to the pre-

fent day, instances of death occur by inoculation. Surgeons, therefore, when they have a number to inoculate, should be exceedingly cautious in discriminating proper subjects, to prevent, if possible, a single blank.

F I N I S.







1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is crucial for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to support informed decision-making.

3. The third part of the document focuses on the role of technology in modern data management. It discusses how advanced software solutions can streamline data collection, storage, and analysis, leading to more efficient and accurate results.

4. The fourth part of the document addresses the challenges associated with data management, such as data quality, security, and privacy. It provides strategies to mitigate these risks and ensure that data is used responsibly and ethically.

5. The fifth part of the document concludes by summarizing the key findings and recommendations. It stresses the importance of ongoing monitoring and evaluation to ensure that data management practices remain effective and up-to-date.









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