The advantages and disadvantages of inoculation with respect to individuals, and the public, impartially considered; to which are annexed, observations on the method proposed by Boerhaave for preventing the small-pox / Translated from the original Latin. Of the late celebrated G. Van Swieten.

#### **Contributors**

Swieten, Gerard, Freiherr van, 1700-1772. Boerhaave, Herman, 1668-1738. Aphorismi.

#### **Publication/Creation**

London: Printed for W. Griffin, 1773.

#### **Persistent URL**

https://wellcomecollection.org/works/m9v5gw3w

#### License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection 183 Euston Road London NW1 2BE UK T +44 (0)20 7611 8722 E library@wellcomecollection.org https://wellcomecollection.org THE

# Advantages and Disadvantages

OF

## INOCULATION,

WITH RESPECT TO

### INDIVIDUALS, and the PUBLIC,

IMPARTIALLY CONSIDERED;

To which are Annexed,

OBSERVATIONS on the METHOD proposed by BOERHAAVE for preventing the SMALL-POX.

TRANSLATED from the ORIGINAL LATIN

Of the Late Celebrated

### G. VAN SWIETEN, M. D.

First Physician and Privy-Counsellor to their Imperial Majesties, Perpetual President of the College of Physicians at Vienna, Honorary Member of the Royal College of Physicians at Edinburgh, A.R.S.P.S, A.R.C.P.S, &c.

#### LONDON:

Printed for W. GRIFFIN, in Catharine-Street, Strand. 1773.

[Price 15. 6d.]

Advantage and Districtions of the Contract of

Olla u A ani bankala U G k V ku ku A ang katengga yanat makumi lan

Transacto from the Original Livery

Of the Lane Colebrated

to alloca

### TOTHE

tend to bring inoculation into differenties while

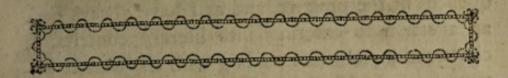
## PUBLIC.

THE practice of Inoculation has of late years received fuch great improvements in this country, that to offer the fentiments of a foreign author on this subject, may perhaps seem unnecessary; at least this consideration would have suppressed any such intention in me, had not the sentiments of the celebrated Baron Van Swieten, which have made a great noise among the faculty, merited particular attention, at a time when Inoculation is become fo general, and practifed by some interested Operators, without the least regard to the cautions, upon the strictest examination, declared abfolutely necessary by this excellent physician A circumstance that, in the end, must prove of ill consequence to the Public in general, and tend

if prudently managed, may fave the lives of millions; being the only probable means of freeing the human race from this terrible fcourge—the Small-pox. In the translation I have endeavoured exactly and faithfully to copy the original, therefore hope to escape the lash of too severe criticism; but, whatever may be the fate of the present Publication, I shall think myself happy if the sole end I have in view is answered, namely, the benefit of my fellow-creatures.

nitional to majority out and a smill of a limit

The TRANSLATOR.



#### THE

## ADVANTAGES

OF

# INOCULATION, &c.

THE great Boerhaave, in the first edition of his Aphorisms published at Leyden in 1709, took not the least notice of the practice of inoculation for the fmall pox; and in his public lectures, simply affirmed, that from several accounts he had learned, that the practice of inoculation had been attended with little danger in Afia, and Greece; and had fucceeded in England in many instances; but that nevertheless a greater number of experiments were required, before any thing certain could be determined concerning it. To the best of my knowledge, he never advised any one to try inoculation at Leyden, or any other town in Holland, nor do I believe that inoculation was ever attempted in that country during the life of this great man. Indeed, about eighteen years after his death, inoculation began to be practifed. Sharp disputes prefently arose concerning the utility, or ill consequences of the practice, and as I have always had an aversion to entering into literary contests, I contented myself with reading with the utmost attention, and without the least prepossession in favour of either side of the question, if not every publication relating thereto, at least every thing that was wrote by the most eminent of the faculty, and other learned men, with the laudable intent of discovering the truth.

The following circumstances seem greatly to

favour the practice of inoculation.

Persons worthy of credit have affirmed, that it feldom happened that any one died in confequence of inoculation, and on the contrary, that the natural small pox frequently terminates in death. It is alledged, that the small pox from inoculation is always of a good fort, in small quantity, passes through its different stages, without any alarming symptoms, and is not in the least dangerous; that it preserves the beauty of the face, to which the natural disease is so great an enemy; nor are ophthalmies, boils, and other troublesome consequences, arising from a translation of the morbific matter, to different parts of the body, ever observed after inoculation; nor does the fecondary fever ever happen, which always accompanies the natural diforder, when the pocks are in the least numerous.

It seems also a matter of great utility, that the physician can choose the particular constitution of the air, that is most favourable to the cure of the

difease, and the season of the year, most convenient for undergoing it. Moreover the infection may be applied when the patient is in perfect health; or if not perfectly well, his health may be amended by art, previous to the infertion of the fmall pox, and the body likewise so predisposed as to bear the difease more easily, and with greater fafety. On the other hand, when the natural fmall pox rages epidemically, it generally feizes all who have not had the difease already, and spares neither sex nor age, and sometimes may happen when the strength is exhausted, and the constitution broke from a preceeding disease, or to women when pregnant, or during their lying-inn, &c. But by inoculation, with little inconvenience, and still less danger, this constant dread of a noisome, disagreeable, and frequently fatal disease, would be removed; for there is no danger of a relapse, or of catching the distemper a fecond time, as appears from the experiments made by Dr. Maty on himself.

These are many, and great advantages that are expected from inoculation. Now that I might form a rule for my own conduct, it was necessary I should weigh every circumstance attentively, before I ventured to determine any thing. I have carefully examined my own heart, and have reason to believe myself, as far as human nature is capable, entirely free from prejudice with respect to inoculation. Physicians who differ in opinion concerning this practice have one and the same intention, at heart, namely the good of mankind: this is sufficient to entitle both parties to the love

and esteem of the public. If there are any who by fraudulent practices, have endeavoured to support their own opinion, no honest man can doubt, but that such persons merit if not our hatred, at

least contempt.

The first inquiry that I made, was whether I could find out with certainty the number of persons who died, and recovered, of the small pox in the natural way. I have carefully examined a diary, that I formerly kept, when in an extensive practice in my own native country: I I have been an eye witness to, and have treated various epidemic small poxes; in many I have remarked the whole course of the disease; but could by no means thereby ascertain the proportion of those who died, to those who recovered

from this distemper.

Moreover, I found it equally difficult, to determine any thing certain concerning this matter, at Vienna. I could procure with tolerable exactness the number of those who died of the fmall pox, but I could never find out the number of those who were seized with this diftemper, in that populous city. If every family had fent for a physician to patients ill with the fmall pox, I might have discovered it: but a great many, employ no physician or apothecary, in this disorder, nor does this happen only among the poorer inhabitants, but even among the rich burghers. For as the laws prohibit persons from going to an house, in which any one is fick of the small pox, unless he can abstain from vifiting the court during forty days at leaft, and

fometimes even from all commerce with perfons belonging to the court, for this reason, more families than is thought, conceal this disease.

I therefore attempted this calculation in different places, where numbers dwelt together, and where I was certain I could exactly know the numbers of those down with the small pox, and the fatal, or happy event of the disease. Hence I learn'd the following facts, the truth of which I

can aver with certainty.

At Neustadt in Austria, is a military academy founded by her imperial majesty, where the young nobility live under military discipline, and are taught the art of war, and the sciences relating thereto. I found that in the space of eight years, thirty three had been seized with the small pox: one of whom died; all the rest recovered. Those only are admitted into this academy, who are up-

wards of eighteen years of age.

There is another military school in the suburb of Vienna, into which boys are admitted, of six or seven years of age, and maintained till they are eighteen years of age, and taught arithmetic, the learned languages, &c. From the winter solftice in 1756 to the summer solftice 1757, forty of these pupils were seized with the small pox, and every one recovered. In the same place, from the summer solftice, to the winter solftice of the same year, thirty children were seized with the small pox, and every one likewise recovered.

In the college of Therefa, so named after the empress dowager, where the young nobility pursue their studies, in the years 1749 and 1750, the

fmall pox raged violently; thirty perfons were feized with the diftemper, many of that number had the difease in a very violent manner, one only died. In 1753 one person only was seized with the fmall pox in that college. In 1757 only two. In 1759 and 1760, in the fame college, twenty-five had the fmall pox, most of them a very bad fort, yet all recovered. In 1761, two; in 1763, one; who likewise all recovered. Thus the whole number of persons ill of the small pox in the college of Therefa, from the 23d of November 1749 to 1765, amounts to 61; of whom one died, and to my great misfortune, this person was my own fon. In the city hospital of Vienna in the year 1759, fifty-nine perfons were feized with the small pox: two of whom died; but both these were afflicted with the rickets in a terrible manner, at the time they were taken ill of the small pox.

In 1757 twenty-seven children were taken ill of the small pox in the orphan house, and out of this number two died. In the same place, towards the end of the year 1759 and the beginning of 1760, eighteen were seized with the small pox, and of them only one girl died, on the eight day of the distemper; long before this child was seized with the small pox, her upper lip was much swelled, and of a livid colour, which at the period when the pock ripens, became gangrenous, and prevented her from taking either medicines or food.

In the year 1759 in the poor house, (Armen baus) situated in the suburbs of Vienna, thirty

persons were taken ill with the small pox, and every one of them recovered.

At the time this same epidemic small pox prevailed, in the Pasmanian hospital, which is likewife fituated in the fuburb of Vienna, in the space of four months, fifty-feven patients were down with the small pox, most of whom were in a dangerous way; yet every one recovered. Very few had a good fort, in the rest the distemper was marked with the most dangerous and alarming fymptoms. Indeed this epidemic constitution was fo fatal, that even the most distinct kind of small pox, did not pass through its different stages without great danger. For in two boys, and a girl, the fever did not remit on the fourth day (as it usually does in the distinct kind); on the fixth day a vast feebleness, a difficulty of breathing, and a delirium came on; on the feventh day purple petechiæ or spots made their appearance; the pocks nevertheless filled well, and were of a yellowish white colour; the weakness indeed continued, but the lightheadedness, and oppression of the breast went off; on the seventeenth day the fever vanished, and afterwards the patients perfectly recovered: and in the rest no bad conse-

quences were observed after the small pox.

From the preceding accounts it appears, that the whole number of persons seized with the small pox in these places, amounted to three hundred and sifty-sive, and that out of the above number seven persons died. And therefore the proportion between those who died, and those who recovered, is one to about sifty. But if three

patients are substracted from the number of the dead, whose deaths cannot with any degree of justice be attributed to the small pox, then indeed the proportion of the dead to the cured,

will be as one to about eighty-nine.

There is not therefore so great a disproportion with respect to the number that die, between the inoculated small pox, and the natural disease, as many have afferted. And as physicians can save so many in the natural way, it to me seems a very cruel thing, to infect a person with a disease, by no means free from danger, and which perhaps he might never, or at least not till very late in life, have been seized with.

The fame variolous infection affects different persons very differently; and therefore the virulence of the difease does not depend alone on the contagion received, but also on the peculiar difposition of the body, to which the infection is applied. The matter of the confluent fmall pox, applied by way of inoculation, has produced a mild distinct fort. On the contrary the matter of the finest distinct pustules of the mildest kind, has been known to produce a very dangerous confluent kind of small pox, agreeable to the opinion of the celebrated Dr. Mead, who fays, "In my opinion, it is of much greater consequence, into what body the poison is conveyed, than from what body it is taken." Although the healthiest bodies be made choice of, and the matter be taken from the mildest small pox, none of the profession are fagacious enough, to foretell with certainty, what kind of fmall pox will enfue.

In a very healthy subject, in the spring season, after the patient had been carefully prepared, and every precaution taken, under the inspection of an able practitioner, a very bad, confluent fort of fmall-pox happened, in consequence of inoculation by laudable matter, taken from a patient who had the small-pox in the most favourable manner, which was followed by a number of very troublefome boils; and the eminent professor Gaubius, could not, without the utmost difficulty, save the life of the patient. This candid physician excellently remarks, that this instance is a proof, that it cannot absolutely be afferted, that the inoculated fmall-pox is never attended with a fecondary fever, nor ever leaves the least ill con-

fequence afterwards.

In a youth twelve years of age, after a careful preparation, and previous bleeding, the variolous matter was applied to a fmall incision made on each arm, the twenty-fourth of March, 1758, in the afternoon. An itching of the parts, and shooting pains under the arm-pits, came on about the twenty-fixth; the countenance grew pale; the lips of the wound, in one arm, mutually receded from each other, and discharged a great quantity of purulent matter; the incision in the other arm was entirely dried up: on the twenty-feventh of March, the heat was more confiderable, the pulse quicker, a constant yawning, the tongue white; a sense of weight was felt in the forehead, but alleviated by an hemorrhage from the nofe; fo great a quantity of purulent matter was discharged from the left arm, that it wetted the dreffings

quite through; the incision became now a deep ulcer, and its lips were a full quarter of an inch diftant from each other. Towards the evening, the head-ach grew worse, and was attended with violent throbbings and a fever: on the twentyeighth, the urine was high coloured, the pulse quick, the face red and fwelled, the eyes moift, a constant weight in the forehead; the ulcer in the left arm discharged plentifully, grew wider, and the upper part of the arm became iwelled. In the evening, the eye-lids, and lips began to fwell, the face acquired a fiery redness, the nausea and fever increased about eleven o'clock at night; the patient had a restless night, and was at times delirious. The upper part of the left arm was now inflamed, and one third larger than its natural fize; the ulcer continued to spread, its lips inflamed and painful, and the discharge very great; nevertherless, at this period, the lips of the incifion in the right arm began to grow hard and inflame, and an eryfipelatous inflammation feized the upper part of both arms; the fever did not remit in the least; the patient had a flight delirium, and, towards noon, vomited a quantity of pituitous matter; in the evening, the wound in the right arm discharged a great deal of matter, and the ulcer continued to spread: the patient was restless in the night, slept little, and bled a fmall quantity at the nose. The following day, all the fymptoms continued the fame. The ulcer of the left arm was fourteen lines in width, and ten lines longer than the original incision; on the thirty-first of March, after a restless night, the

fymptoms continued the same as before, the patient being slightly delirious (a circumstance that was usual with this person, even in a slight feverish disorder); but his eyes were inflamed, and the nose and face tumefied; an hemorrhage from the nose ensued, which relieved the head-ach: in the evening, a fine sweat broke out over the whole body; the swelling of the left arm subsided; but the ulcer still continued to afford such a plentiful discharge, that it required fresh dresfings three times a-day; while a fingle dreffing in twenty-four hours was sufficient for the ulcer of the right arm; from which, however, a flough separated.

Notwithstanding so copious a discharge of purulent matter, the upper and lower extremities were loaded with a vast quantity of pustules; however, but few broke out on the face. The ulcer on the right arm was healed by the nineteenth of April; that on the left arm, about the seventeenth of May. In the younger brother of the above patient, after inoculation, a confluent kind of small-pox made its appearance; and on the thirtieth day after the operation, a tumour was observed under the right arm-pit, which afterwards suppurated. In my opinion, it may fafely be concluded from these observations, that a favourable fort of small-pox does not always enfue after inoculation; and that fometimes, after the inoculated small-pox, other disorders remain, or follow.

Out of fourteen children that were inoculated in the months of March, April and May, 1754,

three or four, in spite of every precaution, at the time the pultules began to dry away, were feized with an eryfipelatous miliary fever, attended with heat, rednefs, and a pruriginous swelling of the face \*. Dr. Kirkpatrick, who has published an excellent treatife on inoculation +, relates three cases: namely, of two girls, who, being seized with a distinct fort of small-pox, both lost their speech during their illness, and the use of their limbs; which complaints indeed afterwards gradually went off; but it was a great while before they were perfectly recovered. He faw the fame accident happen in a man, who was ill with a distinct, and favourable kind of small-pox; who did not recover his speech, and the use of his limbs, till fixteen months afterwards. He moreover fubjoins the case of a boy, between three and four years of age, who was inoculated foon after his recovery of a fever, and before he had perfectly regained his strength: he was seized with violent convulsions, but a small number of pustules broke out, that went through the usual stages; vet he entirely lost the use of his speech, and of his limbs; fo that he could not even hold up his head. At the expiration of three months, his fpeech returned; but five months afterwards, he had not recovered the use of his limbs; neither could he walk without affiftance. Medical history abounds with fuch cases, which confirm the preceding observations; but in my opinion, the above quoted cases are sufficient, as they are ex-

<sup>\*</sup> Medical Transactions of Swifferland, vol. xi, p. 259-

<sup>+</sup> Analysis of Inoculation.

tracted from the writings of men of eminence in the profession, who are worthy of credit, and also zealous sticklers in favour of the practice of inocontacion. I have known many who as noicenno

It is well known, that the variolous infection produces the small-pox alone, and no other diftemper. It has, however, happened, that, from inoculation, a fever indeed has been excited, but no eruption has enfued; because the pre-disposition of the body, at that time, was not fuch as, together with the infection, was capable of producing the small pox: in such cases, there has sometimes came on an anomalous fever, that has continued the space of a fortnight. The variolous matter had been applied to incisions made in both arms; but the incision in the right arm was perfectly healed up, on the fourth day after the operation; the left arm shewed every symptom from which it might be judged, that the infection had effectually taken place; and the wound discharged plentifully, until the fortieth day after inoculation, when that ulcer also healed up. 12 and mannos find

A physician of eminence, who had performed the operation, did not absolutely pronounce, but however, entertained the most fanguine hopes, that this young lady would never after catch the small-pox; because she was constantly with her brother, who had been inoculated with the same matter, and had always slept in the same bed with him, during his whole illness: yet, from the observations hitherto made, this hope seems by

no means a matter of certainty.

For it is certain, that the bodies of persons who have not already had the small-pox, are not always equally disposed to be affected with the variolous contagion. I have known many who, at a feafon when the fmall-pox has raged epidemically, have exposed themselves to the infection with impunity; yet, in a subsequent variolous, epidemic constitution of the air, have catched the small-pox, and have had the distemper in a very severe manner. A maiden lady, above fixty years of age, was feized with the finall-pox, and happily recovered; who, in her early years, had ate, played and slept, with impunity, in the same bed with her brothers and fifters, when they were down with the smallpox; and was thus constantly exposed to the variolous effluvia for two months together. During her whole future life, she had exposed herself to the infection; nay, laughed heartily at me, when I suspected her illness would prove the small-pox; from which she thought herself absolutely exempted. Several other cases, of the same kind, that confirm the truth of the above, may be read in the celebrated De Haen's answer to Tralles.

Nor is it quite certain, whether the hidden feeds of other distempers may not be communicated to the human body by inoculation, together with the variolous matter. Most authors, who defend the practice of inoculation, assert, that nothing of this kind is to be apprehended. The celebrated Guiot, who has wrote concerning the happy success of inoculation at Geneva, on the contrary, affirms, that he is certain, from

a plain experiment, that this opinion is erroneous; and inculcates, that the utmost care ought to be taken, to chuse the variolous matter from a healthy body, perfectly free from every other disorder, except the small-pox \*.

Inoculation is also recommended for this reason: that the inoculated person is freed from a continual dread of the small-pox in future; as this disease spares no age. But many indisputable instances are related by De Haen, of persons who have been feized with the natural small pox, at different times, after inoculation; both where inoculation did not take effect, and where it produced the diftemper at the usual time. I have in my posfession, at this very time, a letter sent me from a noble ambaffador, that contains a fuccinct account of the whole course of a small-pox from inoculation, and that of a natural fmall-pox, which attacked the patient about two years after he had been inoculated; together with a diary of both distempers, drawn up by two very able physicians. who attended the patient in both diforders.

Now this confidence, that, after inoculation, the person is freed from all apprehension of the small-pox, during the residue of his life, has occasioned several to affirm, that inoculation is proper in every period of life; from the most early infancy, to decrepit old age: yet it appears, from the preceding observations, that sometimes a bad and dangerous sort of small-pox happens from inoculation; or the patient is loaded with a vast quantity of pustules, though of the

<sup>\*</sup> Memoirs of the Royal Academy of Surgery, v. xi. p. 556.

distinct fort. Now, to cure such, the assistance of art is wanting; nor can fractious infants be easily prevailed upon to take medicines: besides, suppose dentition should class with the small pox, might not many bad consequences, with reason, be apprehended? Indeed, many physicians of eminence disapprove of inoculation, till the child is sive years of age; and, in my opinion, they act

prudently.

It is true indeed, that the observations of phyficians most worthy of credit shew, that it has happened, that perfons who have had the natural fmall-pox, have, a fecond time, been feized with the fame distemper. But it is certain, that the same has happened after inoculation. Whether it happens more frequently after the inoculated, than the natural difease, time alone must shew. The eminent physician Tralles, seriously weighing thefe and many other circumstances, when ready to try inoculation, which he favoured, on his own daughter, and others, chose to decline the experiment, as he could not fatisfy his doubts on that head. He concluded, at last, " That inoculation, differently viewed, always prefented a different face; that it was difficult to behold its double-faced countenance, now Imiling, by and by grave and threatening, and not be deluded by the one, or terrified by the other: as yet, the happy period is not arrived, when it shall appear, beyond a doubt, to which of the two the preference ought to be given."

Some years ago, inoculation was recommended by feveral physicians of no small note, and was

frequently practifed; but this ardor gradually abated again; so that, at length, the practice was soon almost entirely forgot. Lately, when the question, Whether inoculation should be allowed, or rejected? was warmly debated at Paris, some French gentlemen went to the Hague, in order to be inoculated there, by a famous professor of that art; but, as nobody at that time happened to be ill of the distemper in the place, the magistracy of the Hague published an edict, forbidding inoculation to be practised in that city, and also within the whole neighbouring district.

It is a known fact, that the prudent favourers of inoculation have taken notice of feveral circumstances, wherein they allow the practice of inoculation cannot be undertaken with fafety \*: in particular, they highly disapprove of its being ever attempted, when the natural small-pox rages epidemically in the same place; for they have all dreaded, left the infection should be received by the patient, not only from inoculation, but also fome other way. Whence also the celebrated professor Gaubius remarks, that no epidemic distemper prevailed at Leyden, much less the fmall-pox, at the time inoculation was tried upon a young gentleman; who, nevertheless, had a very dangerous fort of the distemper, in consequence of his being inoculated.

Indeed, the civil magistracy, careful of the health of the inhabitants, in Holland and other foreign parts, forbids the practising of inoculation

Trailes on Inoculation, page 231, where they are enumerated.

For it cannot be denied, but that the inoculated small-pox is capable of spreading the variolous contagion. I have known matter, taken from an inoculated person, applied to a second, produce the small-pox; and, in like manner, the infection, from this person, conveyed into a third, afterwards to a fourth, &c; this experiment was tried nine times, with equal success. Whence we justly concluded, that the strength of the variolous virus was not diminished from so many successive applications of it to different bodies; but remained equally active as at first.

Moreover, it is certain, that persons just recovered of the small-pox, though they have perfectly regained their health, still exhale infection
for some time after; whereby they are capable of
infecting those who have never had the distemper.
But, although I cannot presume to determine,
with accuracy, the particular period of time,
when the infection ceases to exhale from the bodies
of persons lately recovered from the small-pox,
yet I shall relate what I have observed concerning
this matter, in the College of Theresa; the medical care of which, at least, in matters of con-

fequence, is a part of my duty.

It was customary, in this place, to separate persons seized with the small-pox, from all communication with the rest, during the space of six weeks, computing the time from the very first appearance of the distemper. In a remote part of these spacious buildings, some high, airy bed-chambers were kept for this purpose: nevertheless,

from the twenty-third of November, 1749, to the tenth of April, 1750, on which day the last fell ill, thirty persons were down with the small-pox. The distemper now entirely ceased for almost three years. On the third of July, 1753, a young gentleman was taken ill of the small-pox, of which he happily recovered; and then requested, that he might be separated from his fellow students for a longer time than usual; for, mindful of the preceding epidemic small-pox, he was afraid, lest he should infect any of his companions: wherefore, he resolutely bore the irk-someness of solitude for three whole months; and the consequence was, that none of the other young gentlemen catched the distemper.

On the twenty-second day of October, 1757, a noble youth was taken ill of the small-pox, in the same College; on the twenty-first of November following, a second was seized with the same disease: they were kept separated from the rest, the space of nine weeks, and none of the other young

gentlemen catched the infection.

It may, perhaps, be alledged, that the number of those who had never had the small-pox, had been almost exhausted through the variolous epidemics of the years 1749 and 1750; but truly, many still remained, who had never suffered this disease; and every year, several quit the College, having completed their studies, whose places are supplied by fresh pupils, the number of whom generally far exceeds that of the discharged. Whence, when in the year 1759, the small-pox raged violently throughout the city and suburbs

of Vienna, it also again began to attack numbers in the College of Therefa; fo that, from the twenty-fixth of July, to the fecond of January, twenty-three were seized with it, before the diftemper stopped: but it is to be remarked, that many of the students visited their friends who lived in the city, where, when the small pox raged violently, they might easily contract the infection. The diftemper then ceased in the College for almost ten months; viz. till the twelfth of November; and the ninth of December, 1760, it again feized two young gentlemen; two others were taken ill of the same distemper, on the third of January, and on the first of February: but the usual precautions being taken, the small-pox was not farther propagated. In the year 1763, on the fourteenth of October, one young gentleman was taken ill of the small-pox, who being kept itrictly from all commerce with the rest of his comrades, no other person caught the infection.

Hence it is apparent, that persons lately recovered from the fmall-pox, are, for some length of time afterwards, capable of communicating the variolous infection to others, who have not already had the distemper: but though, from the preceding observations, it seems highly probable, that this capability of communicating the infection does not exceed nine weeks after the recovery of the patient, yet it by no means clearly appears from hence, that any thing certain can be determined with respect to this matter.

Indeed, I know the precepts and cautions of the candid Dr. Kirkpatrick, who wrote an excellent treatise on inoculation, and those of other prudent physicians, are neglected; while inoculation is extolled in every period of life, all feasons of the year, even while the natural smallpox rages epidemically. I very much doubt, whether fuch advice will, in the fequel, prove of utility to mankind. The example of a celebrated physician at Leipsic\*, who makes the following ingenuous confession, deters me: "I have this year inoculated four persons; and attended twelve patients in the natural way. Out of the first number I have lost one; but none of the latter; though there were some among them, whom I had been afraid to inoculate, on account of their bad habit of body." Inoculation, therefore, was practifed at a feason when the small-pox raged epidemically; a circumstance, however, which the prudent and more sensible patrons of inoculation, have heretofore entirely disapproved of.

Thus I have briefly and honeftly related the feveral reasons, that have induced me hitherto never to advise any person to be inoculated.

The above observations were written by the learned and ingenious author, a very few months only before his decease. The bills of mortality of this metropolis, strongly confirm the justice and truth of his last remark.

guest, ly as notified or to weaken

De Haen's Practice of Physic, vol. ix, p. 282.

### VAN SWIETEN'S OBSERVATIONS

ON

#### BOERHAAVE'S METHOD

OF

## Curing the Small-Pox by Extinction.

THE great Boerhaave, in his Aphorisms, afferts, that when the first state of the small-pox is certainly known to be present, the most natural indication is, by removing the inflammatory stimulus, to hinder the distemper from passing into its second stage; and thereby prevent suppuration, or any future consequences of the small-pox.

If the various phænomena of the small-pox are considered with attention, an unprejudiced mind cannot entertain the least doubt, but that the distemper is excited by an infectious stimulus; and likewise, that this variolous virus possesses a power of assimilating to itself the before sound parts of our bodies; and therefore, the first curative indication that arises, is to remove this virus from the body as quickly as possible; or to weaken it sufficiently to render it incapable of doing any mischief. But as this virus is so subtle as to escape

the notice of our fenses, and can enter the human body through various inlets, nobody can easily discover the part to which it adheres, or the particular fluid with which it is mixed, before the contagion is brought into action, and has shewn itself by its effects. Hence it is apparent, how very difficult it must be to destroy the received infection, as it does not shew itself any other way than from the effects which it produces, when it begins to act; but then the disease already exists, and art can now only prevent the further progress of the disease.

Greater hopes may be entertained of weakening the received virus so far, as to render it incapable of producing the small-pox at all; or, if this cannot be done, at least of procuring its discharge from the body, by infensible perspiration, before it has done much mischief; or of destroying or leffening its activity, whereby it changes the found parts of the body into its own infectious nature. If art could discover the direct antidote to this poison, it might instantly be rendered inert; but as this at present is unknown, it remains to be seen, whether the body may not be rendered incapable of being affected by the poison, though possessed of its whole virulence. We learn from experience, that some persons escape the disease their whole lives, though frequently and long exposed to this infection: besides, those who have once been attacked with the small-pox, are exempt from it the remainder of their lives; and therefore, if an healthy body could, by medicine, obtain the same disposition as takes place in those who have

had the disease, or who from their own peculiar idiosyncrasy are not affected by the virus when received, the same effect would follow; viz. an immunity from the small-pox, though the variolous poison had lost no part of its activity and virulence. But, to the best of my knowledge, no physician hitherto existing, has been able to discover what the change made in the constitution is, which renders persons who have once undergone the distemper, ever afterwards exempt therefrom; or in what the peculiar idiosyncrasy consists, through which a man continues free from the disorder during his whole life. Now art can never imitate

that of which it is wholly ignorant.

The only thing, therefore, that remains, is to expel the virus, already beginning to disturb health by its stimulus, as quickly as possible out of the body, if it can be done; or at least to destroy, or greatly lessen its activity and power of infecting, whereby it converts the juices of the body into its own nature; for although this infection, when received, may difturb all the functions of the body, and often excite a violent fever, yet all these symptoms may be borne without great danger; for perfons seldom die of this disease, before the puttules have appeared; which, coming out, the fymptoms usually abate; nay fometimes wholly cease, But if the virus has changed a great quantity of the juices into its own nature, then a vast load of pustules is produced; which, during the time they are suppurating, occasion a fresh fever, that frequently kills the patient. Afterwards, from the absorbed purulent matter, and still more

from a gangrenous ichor, if the pock is of a bad fort, a putrid fever arises, of which a great many die, especially if the internal parts of the body are affected in the same manner as the external. If therefore the cutaneous vessels can be so disposed, as to transmit readily the matter assimilated by the infection, which by a critical metastasis is thrown upon these vessels; or this morbid matter itself be so attenuated, as to be exhaled either wholly, or in part, from the body, through the exhalant veffels of the skin; then none at all, or very few pustules would be formed; and the distemper would pass through its different stages, without much danger. Besides, tho' the virus of the disease, already forced into the cutaneous vessels, should have caused inflamed puffules, still there is room to hope, that this incipient inflammation may be discussed by proper remedies, fo as to prevent suppuration: for repeated observations shew, that such a resolution of the inflamed pultules, is not impossible; and that fome puffules, though already prominent above the furface of the skin, have happily been discussed by constant fomentations, and other remedies. When this point is gained, the danger of the fmall-pox is much diminished.

Boerhaave fays, One may hope to remove the stimulus, by correcting it either with specifics, or by the general method to remove inflammation, and its effects.

Specific remedies are fuch as render the morbific cause, inherent in, or applied to the body, perfectly inert, and incapable of doing the least injury; and yet, while they effect this, do not induce any sen-

fible change in the body; for where an intermitting fever is cured by vomiting, purging, or fudorific medicines, fuch methods of cure are not termed Specific. But the Peruvian bark is justly called a specific for intermittent fevers; because it removes them without any fensible evacuation. If a grain of the purest filver is united with highly concentrated spirit of nitre, so acrimonious a preparation is formed thereby, that it instantly destroys the part of an human body which it touches: this caustic property did not exist in these two bodies when separate, but arises from their union. Whatever therefore is capable of diffolving that union, is a true antidote to this poison: now all alkaline salts effect this; because they immediately unite with the spirit of nitre, and therewith form a mild neutral falt, the spirit instantly quitting the filver, and letting it fall under the form of an inert calx. Whenever therefore, fuch a remedy shall be discovered that can remove this morbific stimulus, or render it inert, without disturbing the body to which that stimulus adheres, then such a cure of the disease will justly deserve the appellation of Specific.

The history of poisons teaches us, that some are possessed of such a deleterious quality, that they instantly cause death, without any preceding illness. The steam of sulphur, the vapour or lees of liquors in a state of fermentation, long confined air, &c. kill even the healthiest people in an instant. The virus of the small-pox does not belong to this class; for it does not appear, from any experiment, that it has ever occasioned death, with-

31

amongst those poisons, which, before they kill, produce morbid effects, whereby the human body is corrupted, as it is observed to be in certain known diseases; and therefore, it is then requisite to administer those remedies which have proved serviceable in the cure of such diseases, as dis

covered themselves by the like effects.

As therefore pustules are the consequence of a fever excited by this stimulus, which inflame and suppurate, nay, and sometimes terminate in a gangrene, the method of cure is justly recommended, that is usually prescribed with advantage for the cure of these disorders. The antiphlogistic method will therefore be proper; and indeed, in hopes that the incipient inflammation may be cured by a kind resolution, and the other more troublesome terminations of inflammation prevented, as far as is in the power of art; namely, suppuration, and a gangrene: for, if I can remove all the effects that proceed from a morbific cause, I am certain, that I have taken away this cause; or, at least, that I have rendered it so inert, as to be no longer capable of diffurbing the body. Now both these circumstances are necessary, seeing that they respect the intention of cure in this disease.

But where, as is sometimes the case, the variolous miasmata, from the very first attack, totally overthrow and debilitate the vital powers, and do not cause an inflammatory sever; in such cases indeed, the antiphlogistic method ought not to be tried; but such an one as is suitable for diseases properly termed Malignant.

It is certain, that this contagious stimulus is extremely subtile; and though received into the body in never fo small a quantity, is yet able to cause wonderful changes in the healthiest human body: it may therefore reasonably be hoped, that a like remedy may be discovered, which perhaps may be fo efficacious, that a very small quantity of it may also be sufficient to render this virus inert. Now as at the present period, variolous matter is kept in many places throughout Europe, and it is certain that it retains feveral months its full virulence, so as if applied in the smallest quantity by way of inoculation, to be capable of producing the disease, at the expiration of this time; as likewise that the dried pustules, kept in jars, close stopped, according to the Chinese method, preserve the same efficacy, the nature of this poison might be invefligated, and various experiments made thereon; fo that possibly something might be found out, capable of subduing this poison by a specific power, and thus extinguishing the distemper in its very infancy.

The history of poisons, renders it extremely probable, that every poison has its peculiar antidote; by which it is entirely destroyed, or so weakened, as to be rendered incapable of doing further mischief, and yet no injury happen to the human body from such antidotes, either taken, or externally applied. Indeed, as we do not understand the nature of poisons à priori, neither do we that of antidotes, which mostly are extremely simple, and substances which one would not readily imagine possessed such excellent properties. Sugar, for in-

stance, so innocent a substance, powdered fine, and swallowed, is an antidote to that terrible poison with which the Indians generally imbue their arrows. By this means a hen recovered, though the poison was infused thro' a wound; when another fowl, to which the above remedy was not administered, died presently. The deleterious quality of a spirit distilled from the leaves of laurel, which instantly proved fatal, has been noticed in England. I myfelf, when I first studied physic, in company with my fellow-students, have frequently. drank an infusion of these leaves, with the addition of milk and fugar; nor did I ever find the least ill consequence from it. Piso, attempting to investigate several like antidotes, uses the following words: "Wherefore I found it necessary to obtain many, partly by my own experience, partly by gratuities and intreaties from the barbarians; who, as they are extremely expert in administering of poisons, and as obstinately conceal such secrets, are equally ingenious in administering antidotes; and, as foon as they discover the nature of the poison, instantly gather most efficacious herbs in the woods, which having bruised, they make the poisoned person drink the juice, and recover him from the very jaws of death." Now these antidotes were either discovered by these barbarous nations, through accident, or in confequence of various experiments, and not found out by reafoning: whence Celfus rightly concludes, "That there is no place in the world, where the art of physic is not found; for even the most barbarous nations are acquainted with herbs, and other eafy

remedies, for wounds and diseases." If therefore fuch ignorant people have been fortunate enough to discover certain remedies for the cure of different distempers, and antidotes for poisons, what might not be expected from learned physicians, whose fagacity and knowledge of nature are far greater; if, laying afide hypothesis, they would ferioufly apply themselves to trace out the nature of this poison, and try various things to subdue its malignity? But so long as the medical schools are only taken up with fubtle disputes on this and like matters, we shall be obliged to confess with Celfus, that the faculty "have abundance of words; but very little skill in the art of healing." An ample field for experiments lies open; especially while the fmall-pox is communicated by inoculation; and remedies can be administered, before the infection is applied to the human body. Condemned criminals who have never had the smallpox, if leave could be obtained from government, would joyfully accept a pardon upon these terms; and the hope of public utility would be confidered as a fufficient recompence for their trouble, by all worthy men; and if fuccess should crown their endeavours, the discovery would certainly prove of the utmost benefit to mankind.

It remains, that we consider the remedies already tried with this view; and, indeed with some success, that other experiments may thence be formed, which perhaps will turn out still more successful.

Boerhaave is of opinion, that the specific corrector of this poison ought to be sought for in fome preparations of antimony and mercury, brought to a great degree of penetrability, without being too corrolive from a faline acrimony, but thoroughly united together; from the success that has sometimes attended medicines of this very nature in the small-pox.

The great medicinal efficacy of quickfilver, both physicians and chymists allow; and likewise have remarked a vast difference in the effects of different preparations thereof: and the moderns, having divested themselves of the great dread which the ancient physicians seem to have entertained of this remedy, fuccessfully use quickfilver in the most obstinate diseases. It cannot be denied, that the imprudence of rash men has frequently hurt the reputation of this medicine. who have boldly administered the most corrosive preparations of this mineral in too large doses; or have repeated them too frequently; or lastly, have prescribed them to patients, in disorders where the use of mercury is always prejudicial: however, the candid have never attributed these mischiefs to the remedy; but have justly accused the unskilful and ignorant empirics; who, to the shame of the legislative power, are suffered, with impunity, to sport with the lives of their fellowcreatures; a circumstance greatly to be lamented.

It is certain, that the most obstinate ulcers, many cutaneous disorders that have resisted the force of every other remedy, even the venereal disease, are happily cured by a prudent use of mercury. No wonder therefore, that the faculty have sought in this mineral an antidote to the

feemed to persuade, that benefit might be expected therefrom. Crude quicksilver had been administered with some success in canine madness; which poison is capable of lying latent in the human body a long while; and, at length, becoming active, causes most terrible disorders, and death; converts the juices of an healthy person into its own infectious nature; and in like manner, as the variolous virus, adheres to linen and woollen

cloaths, and fo propagates the disease.

Moreover, we read in the third volume of the Miscellanea Curiosa, that calomel has proved ferviceable in the small-pox itself; that not only the pustules have rose more kindly after its being administered, but sometimes, either none at all, or at most, very few pustules have appeared. A phyfician gave his own daughter, a girl ten years of age, who had every fymptom of an approaching fmall-pox, a pretty large dose of calomel; viz. a fcruple of calomel, with four grains of fcammony: which gave her four flools, and, in the evening, wrought violently upwards; the patient afterwards had a good night; nor did the small-pex ensue, though the distemper then raged epidemically; and her brother had the small pox at the same time, in a very fevere manner. He afterwards, administered the same medicine to a girl about eight years of age; but not at the very beginning of the disease; and the child had the small-pox in a very favourable manner. Malouin relates, that a woman, afflicted with the venereal disease, who had worn a mercurial plaister upon her hip, to

discuss a scirrhous tumour on that part, was seized with the fmall-pox, and the plaister instantly taken off; the whole furface of her body was loaded with puftules, except the part that had been covered with the plaister, which had not a fingle puffule on it. These, and many other instances feem to indicate, that, with prudence, the use of mercury may be tried in this distemper. Circumspect physicians will, notwithstanding, rather avoid the more acrimonious mercurial preparations, lest they should excite new and too violent commotions, in a disease frequently violent in its own nature; though fuch powerful medicines may be used, with safety, in very small doses. I know, from repeated experience, that even corrofive sublimate, which is one of the most acrimonious of all mercurial preparations, when given in fuch fmall doses as not to irritate the stomach or bowels, will cure many very stubborn diseases, without causing any fensible evacuation.

Moreover, we learn from chymistry, that wonderful medicinal properties are contained in antimony: while the metallic reguline part is united with the sulphureous part, it is rather an inert body; but when the reguline part is separated from its sulphur, it then acquires a surprizing activity; and indeed, so great, that it communicates to wine, if insused therein, a most violent emetic property, without any sensible diminution of its own weight: nor is this quality easily exhausted by repeated affusions of fresh wine, as is well known to the faculty: but experienced practitioners know how to so dilute this antimonial emetic wine, and other preparations of antimony, and administer them in such small doses, as to hinder their acting upon the first passages; and thus promote a diaphoresis, expectoration, or the urinary discharge, whereby they prove extremely beneficial in many diseases. Indeed, Sydenham, where he suspected a constuent fort of small-pox, after venesection, prescribed an antimonial vomit: nay, if the patient was in great danger on the eleventh day in the constuent small-pox, from a suppression of the salival discharge, he gave a large dose of the antimonial wine; and seems, in this dangerous state of the disorder, to have depended solely on this remedy, as it had sometimes, though not always, succeeded happily.

The milder antimonial preparations, that do not greatly ruffle the constitution, have, however, been particularly extolled for this intention; such as, diaphoretic antimony; especially if not divested of its fixing nitre; which preparation is usually called, in the shops, Unwashed Diaphoretic Antimony; or, unwashed calx of antimony; and is made by burning pure antimony to a calx, with three times its weight of nitre: for the same reason also, the nitre washed from this diaphoretic antimony by means of warm water, is prescribed; which preparation is kept in the shops, under the name of antimoniated nitre.

But those medicines have principally been recommended, in which quicksilver, or the milder preparations thereof, are united with antimony. Hence cinnabar of antimony, which consists of the fulphureous part of antimony, perfectly united with the purest quickfilver, has obtained a vast reputation in this disease. Every body knows, that this medicine is prepared, by rubbing two parts of corrolive fublimate with one part of crude antimony, previously powdered, for a considerable time; this mixture is afterwards distilled in a widenecked retort, with a ftrong fand heat: in confequence whereof, the spirit of sea-salt that was contained in the corrofive fublimate, quits the quickfilver, unites with the reguline part of the antimony, and passes with it into the receiver, and is then called Butter or Oil of Antimony; a most virulent, corrofive, caustic medicine: and the quickfilver, freed from its union with the spirit of sea-salt, is united with the sulphureous part of the antimony, and fublimed into the neck of the retort, under the form of a true cinnabar, which is called, Cinnabar of Antimony,

However, as many chymists think that the sulphur of antimony differs very little from common pure sulphur, hence factitious cinnabar has also been administered for the same intentions; as also that which is found in the mines, called Native Cinnabar, consisting likewise of sulphur and quicksilver, thoroughly united together. Cinnabar, we read, has long been in high repute among the Chinese, as a preventative of the small-pox\*. Indeed, sulphur itself admirably corrects contagion, miasmata floating in the air, and possesses a power of subduing poisons: it is also of

<sup>\*</sup> Lettres Edefiantes et Curieuses, vol. xx. p. 342, 343.

excellent use in many cutaneous disorders: no wonder, therefore, that physicians have thought of fulphur, when in fearch of a remedy preventive of the small-pox; especially, as from sulphur and quickfilver, thoroughly united, a gentle medicine is produced, that no ways disturbs the functions of the body, and yet is of great use in curing many difeases. Such an one is the preparation called Æthiops Mineral, made by melting fulphur in an iron ladle over a gentle fire, then adding an equal quantity of purified quickfilver, and ftirring them together till the mixture is completed, and becomes a black mass: or equal parts of fulphur and purified quickfilver may be ground together in a glass mortar, until they are perfectly united; but this last is a tedious way of preparing the medicine. Now if æthiops mineral is distilled in a close vessel, with a fierce fire, it is sublimed into cinnabar, as every body knows; whence physicians have generally expected the same effects from either preparation. Dr. Lobb relates some cases of persons, who having never had the small-pox, nevertheless were a long while conversant with perfons fick of this diftemper; nay, and flept in the fame bed with them, yet did not catch the smallpox: these persons took, twice a-day, two drachms of æthiops mineral, with the addition of a further quantity of fulphur. The Doctor fometimes mixed with this powder, myrrh, camphor, and some other articles; but feems to have placed his principal dependence upon æthiops mineral, fulphur, and cinnabar; which medicines he prescribed not only

as preventatives, but also in hopes of diminishing the virulence of the distemper already catched; and indeed in pretty large doses. It must be owned, however, these experiments have not always turned out successful; for we read, in the third volume of the Edinburgh Medical Essays and Observations, that, in the year 1733, when the small-pox raged epidemically at Edinburgh, some persons died of a consuent small pox, who had undergone a mercurial course, and had been asterwards kept for a considerable time to the constant use of æthiops mineral, by way of prevention.

Hence a certain antidote for the variolous infection does not feem yet discovered: therefore, all good men ought to turn their attention to this interesting subject; and, with due prudence, try different things, which a future serious meditation on this distemper may induce them to think will prove of service, in putting a stop to this terrible scourge of mankind.

The following are the formulæ recommended by Boerhaave: upon the fame plan, a variety of other prescriptions may be formed.

Take of the unwashed calx of antimony, six drachms;

Calomel prepared, half a drachm; Sal polychreft. one drachm:

Grind them together in a glass mortar a confiderable time; then divide the above quantity into twenty-four equal parts; one of which is to be taken every third hour, and washed down with at least a quarter of a pint of whey.

Take of the flowers of brimstone, one drachm; Cinnabar of antimony, one scruple;

Unwashed calx of antimony, fal. polychrest. of

each, a drachm and a half:

Grind them together into a very fine powder; divide the above quantity into twenty-four doses; one of which is to be taken in the same manner as the former.

#### THE END.

for my pursuant and pro to this terr lite

Take of the visualistic of the or and to said

the Bowle and Post sogue trems well ad

into swems stock equal caris cone of which is to

# Books printed for W. GRIFFIN, in Catharine-Street, Strand.

The SEVENTH EDITION, Price Two Shillings,
O F

## Every Man his own Physician.

BEING

A Complete Collection of Efficacious and Approved Remedies for every Disease incident to the Human Body, with plain Instructions for their common Use.

### By JOHN THEOBALD, M. D.

Author of the Medulla Medicinæ.

Compiled at the Command of his late Royal Highness the

#### DUKE OF CUMBERLAND.

In this Edition are given necessary Instructions for the Preservation of Health, and Rules for nursing Sick Persons, &c.

Price Five Shillings, in Boards,
Designed for the USE of SCHOOLS,
THE BEAUTIES OF ENGLISH POETRY,
Selected by Dr. GOLDSMITH,

Also, Price 2s. written by the same AUTHOR,
The DESERTED VILLAGE,
A P O E M.
THE SEVENTH EDITION,

Also, Price Bound Seven Shillings,

A

### Collection of Decisions of the Court of King's Bench,

Upon the Poor's Laws, down to the present Time. In which are contained many Cases never before published. Extracted from the Notes of a very eminent BARRISTER, deceased. The whole digested in a regular Order.

### By EDMUND BOTT, Efq.

Barrister at Law, of the Inner Temple.

To which are added, EXTRACTS from the STATUTES concerning the Poor. The Second Edition, with confiderable Additions. The Cases brought to Hil. 13th of Geo. III. inclusive.

## BOOKS printed for W. GRIFFIN.

Price FIVE SHILLINGS, Bound,

## Every Man his own Gardener.

Being a much more Complete

### GARDENER'S KALENDAR

Than any One hitherto Published.

CONTAINING

OT only an Account of what Work is necessary to be done in the Hot-House, Green-House, Shrubbery, Kitchen, Flower, and Fruit Gardens, for every Month in the Year; but also ample Directions for performing the said Work, according to the newest and most approved Methods now in Practice among the best Gardeners.

In this Edition, particular Directions are given with respect to Soil and SITUATION; and to the Whole is added, complete and useful Lists of

FOREST TREES,
FLOWERING
SHRUBS,
FRUIT TREES,
EVERGREENS,

ANNUAL,
BIENNIAL,
and
PERENNIAL
FLOWERS,

Hor-House, Green-House, and Kitchen Garden Plants.

With the Varieties of each Sort, cultivated in the ENGLISH Gardens,

# By T H O M A S M A W E, (GARDENER TO HIS GRACE THE DUKE OF LEEDS)

AND OTHER GARDENERS.

THE FIFTH EDITION, Corrected, Enlarged, and very much Improved.

Price FIVE SHILLINGS, in Boards,

A

### NEWTREATISE

ONTHE

## Laws concerning TITHES;

CONTAINING

A LL the Statutes, Adjudged Cases, Resolutions, and Judgments relative thereto, with some interesting Cases concerning Tithes, determined in the Court of King's Bench, by the Earl of Hardwicke and Lord Mansfield.

The THIRD EDITION, Corrected and Enlarged; with the Addition of feveral Cases never before printed.

By T. CUNNINGHAM, Efq.