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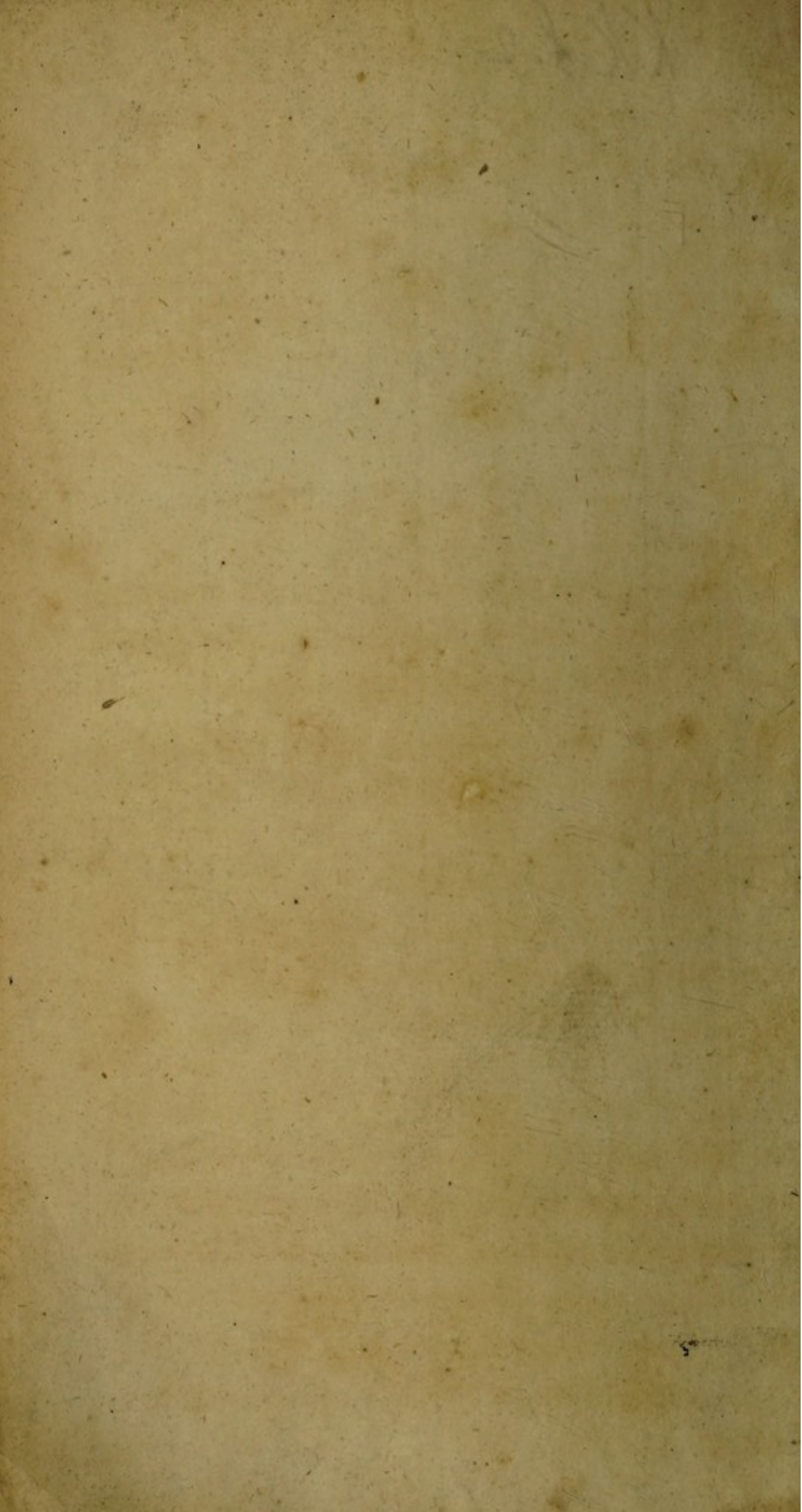
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TREATISE

UPON THE

SMALL-POX,

In Two PARTS.

CONTAINING,

I. An ACCOUNT of the Nature and several Kinds of that Disease, with the proper METHODS of CURE,

II. A DISSERTATION upon the modern Practice of INOCULATION.

By Sir *RICHARD BLACKMORE*, Kn^t.

The Second Edition.



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T R E A T I S E

ON THE

S M A L L - P O X

I N T W O P A R T S

By J. J. ... of the ... and ...
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A D I S T I N C T I O N ... the ...
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T H E
P R E F A C E.



THE Colleges of Learning employed in enquiring into Nature, and searching after the Causes of Things, for many successive Ages, unhappily proceeded in such Ways and Methods, as rather obstructed than promoted the End they had in View: For they formed nothing but notional Systems, and Schemes of Speculation, falsely called Science, the trifling Play of Fancy, and the idle Labour of the Closet. These curious Subtleties, for want of firm and solid Foundations to rest upon, hung in their Brain, and floated in their Imaginations like fine-wrought Cobwebs, or the loose Threads, that in frosty Mornings are caught in Hedges, or hover in the Air; and for this Reason it is, that natural Science has received

so little Improvement and Augmentation since the Schools of Philosophers were first erected, even down to the last Age: For the Masters of the various Sects of Scholars having not unravelled the Principles of Nature, nor searched accurately into the Order and Connexion of Causes and Effects, it is no wonder that being unfurnished with Experiments and Observations they made no Advances, but to their great Dishonour, with much Sweat and Application, left to Posterity their lame and insignificant Plans: And all Progress and Improvement must have been denied to all useful Learning, and the succeeding Ages must have sat down satisfied with knowing no more than the dry and jejune Schemes of antient Greece, had not some of a more inquisitive Genius, and better Judgment in these later Times, plainly seen that the eldest Philosophers began at the wrong End in searching after Science; that they formed precarious and extravagant Systems, and built Castles of Philosophy in the Air, which had no Pillars, that is, no Observations and Tryals able to support them. These therefore took another and the right Method to come at the Knowledge of Nature, by entering into her secret Operations, and finding out the Coherence of

Causes

The P R E F A C E. v

Causes and Effects, and making one Discovery confess another, while by the Aids of Chymistry, and innumerable Experiments, they endeavoured to learn the Properties and Energy of Things. This was certainly to act like Men of Reason and Reflection; for if any substantial and solid Scheme of natural Philosophy, that will abide the Test, and satisfy judicious Men, shall ever be produced by human Industry, it must be done this Way, by which the Compiler of it will have sufficient Observations and Experiments as Vouchers, to warrant and uphold all his Positions.

And as the Knowledge of experimental Philosophy is greatly to be prefer'd to that of the Student, who deals in empty Speculations and scholastick Chimeras; so are the Acquisitions and Endowments of the experimental Physician, who has formed his Method of Practice upon sufficient Experience and Observations on the Nature, Progress, and various Symptoms of Diseases, as well as on the Operations and Force of Medicines, far more valuable than the abstruse and unsupported Notions of one, who owes all his Endowments to an active Imagination, and the contemplative Labour of the Closet. It is for this Reason that Dr. Sydenham, who built all his
Maxims

Maxims and Rules of Practice upon repeated Observations of the Nature and Properties of Diseases, and the Power of Remedies, has compiled so good a History of Distempers, and so prevalent a Method of Cure, by which he has improved and advanced the healing Art, much more than Dr. Willis, with all his curious Speculations and fanciful Hypotheses: For what can be expected but crude and unprofitable Conceptions, from Gentlemen, that imagine they have acquired great Attainments in the Art of Curing, and are accomplished Physicians, before they have had the Advantages of Experience and Observation? They may as well imagine they can learn to swim in their Parlours without going into the Water, as to become useful and able Physicians, without being verst in Business, and seeing the various Operations of various Medicines. Such Persons will rather receive great Prejudice from their Systems established only by Contemplation; for when they come from the College into the World, they will be very apt to practice in Conformity to their preconceived Opinions, and instead of erecting a Scheme of Physick upon mature Experience and long and just Observations, they will labour to compel their Experience and Observations

tions to favour and take part with their antecedent Maxims, and settle a Method of Cure by the Influence of a byassed Judgment, and pre-notions of Things. It will be in vain to say, that these Persons, who have not seen much Business, have formed their unpractised Scheme upon the Experience and Observations which they have found in the Writings of many eminent Physicians; for those Authors themselves, at least the generality of them, were such as before they had entred on the Practice of Physick, had established their Maxims and Doctrines in the Schools and Colleges, and not entring upon Business with an unprejudiced and impartial Mind, they formed their Practice and governed their Observations to make them agree with their first Conceptions; and though according to Reason and the Nature of Things they ought in the first Place to have made their Tryals and Remarks, and upon such Vouchers and Authority to have raised a well-concerted Method of Practice; yet almost all Writers of Physick have communicated to us such Accounts of the Causes of Distempers and their Symptoms and Method of Cure, as were strained and wrested to serve an Hypothesis.

But

But it must be acknowledged that a great Number of Persons, that are designed for this useful Profession, for want of native Genius, Judgment and Penetration, are incapable of making just Observations, or drawing right and beneficial Conclusions from them. Their Heads, such is their Unhappiness, are so thick and hairy, so heavy and slow is their Apprehension, and so incorrigible their Stupidity, that they are perpetually puzzled and cannot but with great Difficulty and Pains make any Thing out. When they undertake a Patient, they are bewildred and in a Wood, and being unable to strike out their Way, when they attack a Disease they discharge a random Pill, or play off an unprofitable or hurtful Bolus at a Venture. When I reflect on the great Number of these unfortunate Men, especially in Country Towns and Villages, that enter upon a difficult Profession, in which for want of Sagacity, and good Sense required on Nature's part, they are unable to succeed, and are likely to be more detrimental than beneficial to their Patients, of whom they serve those best, whom they visit least; and when I consider likewise the Swarms of Empericks and ignorant Pretenders to the Knowledge of Physick, and compare them with the few, that

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are endowed with suitable Qualifications, for the Cure of Diseases, I am doubtful whether the whole Faculty might not be spared without any Damage to Mankind in general. It is true that Courts and populous Cities are happy in this, that there are among them many learned, able and worthy Physicians, to whom the Sick may have recourse: But how small is their Number, when compared with all the weak and ignorant Doctors, Quacks and Mountebanks, that abound not only in the Country Towns and Villages, but likewise in great Cities themselves? and then setting the Damages and Mischiefs, that arise from the Ignorance and Unskilfulness of such Practisers, against the Good, that is done by the Judicious and Skilful, I am afraid that the last will be much over-balanced. Nature would struggle hard and do a great deal towards the Relief of many Distempers, where a proper Diet is used; would not confident Undertakers without Knowledge and Judgment, interpose their impertinent and noxious Medicines, by which they pervert the wholesome Operations of Nature, oppress her Strength, and by their ill-chosen Remedies put a curable Disease beyond all hopes of Recovery.

A native Genius and Capacity accompanied with a competent Degree of Learning, must conspire to make an accomplished Physician; but if these are separated, the first improved by Experience is far preferable to the last: A Man by Nature dull and unanimated, let his Head be ever so much stuffed and crowded with old Authors, scholastick Ideas, and Common-Place Collections, will never acquire any tolerable Qualifications for the Profession of Physick. It was the Saying, as I have been informed, of Col. Titus, That Learning was fit Armour for a strong Man, but that it oppressed and crushed a weak one. I believe the Remark is just; for a great deal of reading and crude and undigested Notions huddled together without Coherence, not only sit very awkwardly about a sleepy and spiritless Scholar, but they overwhelm and confound him to that Degree, that he is unable to Use them to any beneficial Purpose: On the contrary, for want of Skill and Prudence, he is very likely to do great Harm and Mischief; for Medicines are Weapons, that cannot be trusted with less Danger in the Hands of a Fool, than a Madman. Men of a ready Apprehension, clear Reason and distinguishing Judgment, cultivated and improved by Practice and Business,
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will soon attain great Abilities in their Profession, though destitute of the Help of Letters and a liberal Education. It is in this Case, as in that formerly of an eminent though illiterate Member of the House of Commons, of whom it has been said, That by that Time he had spoken a quarter of an Hour, he put all Learning out of Countenance. For it is very evident that a Man of good Sense, Vivacity, and Spirit, may arrive to the highest Rank of Physicians, without the Assistance of great Erudition and the Knowledge of Books: And this was the Case of Dr. Sydenham abovementioned, who became an able and eminent Physician, though he never designed to take up the Profession till the civil Wars were composed, and then being a disbanded Officer, he entred upon it for a Maintenance, without any Learning properly preparatory for the Undertaking of it. And to shew the Reader what Contempt he had for Writings in Physick, when one Day I asked him to advise me what Books I should read to qualify me for Practice, he replied, Read Don Quixot, it is a very good Book, I read it still. So low an Opinion had this celebrated Man of the Learning collected out of the Authors, his Predecessors. And a late celebrated Physi-

cian, whose Judgment was universally relied upon as almost infallible in his Profession, used to say, as I am well informed, That when he died, he would leave behind him the whole Mystery of Physick in half a Sheet of Paper. It is true both these Doctors carried the Matter much too far, by vilifying Learning, of which they were no Masters, and perhaps for that Reason. And lest I my self should be here mistaken by my Readers, and looked upon as a Writer of Raillery and Satyr upon Learning, I crave leave to explain my self as before, by saying, that I do by no means depreciate, or expose any Kind of useful Learning in any Art or Science whatsoever, but much esteem and honour the Masters of it. And again I affirm, that notwithstanding Genius alone is far more successful, than Learning alone, which is indeed insignificant, if not mischievous as before asserted, yet when they are united in the same Persons, they become of all others the most excellent and accomplished Physicians. But the Learning required for this Profession, is not perhaps so various, extensive and difficult, as some imagine, or are willing that others should believe, and what Kinds of Learning are necessary, or at least expedient and desirable, to fit a Student for
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the Practice of Physick, is not in my Judgment difficult to determine.

A competent Knowledge of Chymistry, as well as Anatomy and Botany, are very requisite and beneficial; but to enter into the minute Recesses of Nature by chymical Pursuits, and with great Expence and Application to endeavour to be an Adept, and a Person of Distinction, is by no means desirable. Every one should be discouraged from such Researches and long Labour in the Fire, by the Example of that valuable and excellent Person, the Honourable Mr. Boyle, a curious and indefatigable Searcher into Nature, who by all his chymical Toyl and Lucubrations, has for the Service of Physick and Cure of Diseases produced only a little Collection of Remedies and Receipts sold for twelve Pence, but too dear. It is very observable, that all the prevalent Medicines that serve the greatest Part of the Purposes of the Profession, namely, Steel, Mercury, Opium, and the Peruvian Bark, are more efficacious and successful, when they have not undergone any chymical Operation, but are used as Nature formed them: And as to Cordial Waters, Tinctures, and Spirits, they signify little for the Cure of Diseases, as all experienced and judicious Physicians must know,

know, and the Art of making them is soon learned and without Difficulty. And as to the Knowledge of Plants, that are beneficial in Physick, their Number lies in a very narrow Compass, what Multitudes soever are the Objects of the natural Historian's Consideration; and though Anatomy is a very curious and delightful Amusement and highly necessary for the Accomplishment of the Surgeon, yet a very minute and extensive Knowledge of it is what an able and skilful Physician may be without: But an accurate and distinguishing Knowledge of Pharmacy, the Nature of Drugs, and the Manner of preparing and mixing them in due Proportion for making of compound Medicines is what the Physician should labour to be acquainted with. Add to this a due Knowledge of experimental Philosophy, for as to the speculative and metaphysical Systems they are dark and impertinent, and this will abundantly suffice for preparatory Qualifications; the rest and the greatest part of the Doctor's Accomplishments must arise from Practice and Observation.

The Reader will see that I have not set down a great Acquaintance with abundance of Writers, especially the Antient, as necessary or useful for a Student in this Profession;
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for I do not think they are so. A competent Number of the most celebrated modern Authors should be perused; but their systematical Way and formal Institutions are at least for the greatest part so tedious, heavy and spiritless, that I cannot see how a great Application to them will be of much Service.

There is yet less Profit to be gained by a laborious Study of the eldest Writers of the Faculty; for such is their Obscurity and Ignorance, and so great and various their Defects, that much Time must be spent in reading over their numerous Volumes, and so little, if any, beneficial Knowledge will be got, to balance this Expence, that Time must lye heavy on any Man's Hands, that employs it this Way.

But before I mention the Weakness of the eldest Authors, it is but just to allow them their due Praises, and to make likewise an Apology for their Imperfections. They are to be esteemed and honoured for this, that they were Men of Sense and good natural Endowments, and that they employed their Talents with great Labour and Industry to find out the Art of curing Diseases, and that they made some commendable Advances in it; and that they knew so little of the Matter comparatively, is owing to this, that Physick be-
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ing then in its Infancy, as other liberal and mechanical Arts have once been, required like them, Time, Observation and Experience to bring it to Maturity. And the more abstruse and difficult any Art is, the longer will it be before it arrives at a State of Perfection. It was therefore the Fault of the Times, and not of the Persons, that they were not wiser and more able Physicians. It is to their great Honour that they were the first Inventers of the healing Art, or at least the first that made any considerable Improvement in it, and in this they deserved well of Mankind and excelled their Predecessors, as much as they fall short of those, who succeeded them. It was owing to their own good Sense and Diligence, that they knew so much, and to the Age they lived in, that they knew no more; and therefore I may justly make the same Apology for them, which the eminent Poet, Mr. Dryden in one of his Prologues makes for the old English Writers for the Stage:

The Age was dull, and Comedy was coarse,
 Cob's Tankard was a Jest, and Otter's Horse;
 Our Men and Ladies now speak better Wit
 In Conversation, than those Poets writ.

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175

The P R E F A C E. xvii

This is the Case of the first Writers of our Profession; though they started a few good Things, and had some Knowledge in Plants and Minerals, yet their Understandings were still clouded, their Sentiments embarrassed, and their Ignorance very great; and what Advantage can accrue from a laborious Study of such Authors? If a Man had perused often, and common-placed all Aristotle, and gone thro' the immense Volumes of the grave Triflers his Commentators, would he by that become a Philosopher of any Value? In like Manner had a Student read all the Works of Hippocrates, and with indefatigable Toil ransacked and rifled the crude and undigested Heaps of Authors, who by undertaking to set him in a clear Light, have added their own Darkness to that of the Text, what could they gain worthy of their Labour? What Knowledge could they acquire to reimburse them for their Expence of Time? Are not these innumerable Volumes, these Productions of fruitless Industry, become Piles of waste Paper and the Refuse of the Shops? Are they not the heavy Lumber of Garrets, and the Trumpery and Riffraff of old Libraries?

And supposing any Man should happily translate the Text of Hippocrates himself, and

by correcting his involved Method and removing his Obscurities should set his meaning in a full and clear Light; and particularly should he unriddle his τὸ θεῖον quid divinum in some Distempers, which is as dark and as inexplicable as Aristotle's ἐντελέχεια, or his occult Qualities and substantial Forms in lifeless Bodies, What has he done for the Advantage of the present Age, which is so much refined and improved since the Times of that Author, and seeing the Art of Physick is now got out of its Cradle, freed from the Weakness of Infancy, and being grown Adult is possessed of the Schools, and dictates from the Chair? Should any Man compile and publish an accurate Account of the Passage of King Solomon's coasting Fleets from Esiongeber through the Red Sea to the Ports of Asia, or the East Indies, or of the Manner of the antient Tyrians sailing along the Shores of Africa or Europe, when the Seamen of all Nations were ignorant of the Use of the Load-stone in Navigation, and intended this Performance for the Improvement and Instruction of Modern Sailors, who understanding the Compass since invented, perform their Voyages with more Safety, and in a far shorter Time, would not the World cry out,
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What is come to the Man? How should such a ridiculous Design ramble into his Head? And is it not equally absurd to publish the Works of Hippocrates, who neither knew the Use of the Pulse, though as necessary in Physick as the Compass in Navigation, nor the Circulation of the Blood, nor the Benefits of Chymistry, for the Advancement of the Art of curing Diseases, and the Direction of Physicians at this Time, who are Masters of all this Knowledge, and a great deal more, of which the Greek Author was destitute? Suppose likewise that any Man was acquainted with the Model of the first Boats and Ships, whether built by the Argonauts or any before them, or of the original Contrivance of the Junks and Canows employed by the Indians, and should write a curious History of this Invention, and declare that he designed it for the Benefit and Instruction of the Builders in his Majesty's Docks, and the Service of the Royal Navy; I cannot imagine that he would be much respected and applauded as their Benefactor, by our Master Shipwrights. Many more Instances might be insisted on, as the Art of making Clocks, and that of comick and tragick Poetry in their first Rise,

to shew the Vanity and Unreasonableness of propounding the Examples of the Antients, when Arts and Inventions were green and scarcely begun, for the Service and Imitation of others many Ages afterwards, when those Arts and Inventions are brought to a great Degree of Perfection. Grant that Hippocrates was complemented with divine Honours, and that Æsculapius his Predecessor, who if Cicero was rightly informed, practised at first the low Art of drawing Teeth, was for his Skill, such as it was, advanced from so mean a Beginning to the highest Dignity, (strange Rise!) from a Tooth-drawer to a Demi-god! yet this is no more than happened to the first Inventors of any Art, that was very commodious and beneficial to Mankind. Bacchus and Ceres had their Priests and Temples, one for his being the first Planter of the Vine, and the other for finding out the Way of sowing Bread-corn; and yet if any Man could give us an Account of the first raw Attempts and imperfect Practice in these Arts, he might indeed gratify the curious Lover of unprofitable Philology, but never oblige the present Age by any useful Knowledge.

*In a Word, all the Benefit, that can arrive, by the Translation of Hippocrates or any antient Author in Physick, is only to exhibit the State of Physick in its Birth and Infancy, that the Reader may see its Weakness and Imperfections, compared with its present mature State, and so may please as an Historian; but surely none can imagine that the present Physicians can receive thence any Lights for their Improvement: If any should think so, for some Men have a strange Way of Thinking, and a great Dexterity in deviating from the Right, let them learn the Weakness of that Author from his two most celebrated Pieces, his Book of Fevers, and that of Aphorisms. As to his Book of Fevers there is no Account given in it of the Nature, nor of the different Kinds of that Disease, nor any Method of Cure, nor any Medicines proper and beneficial to suppress it: My Reader will here begin to wonder and cry out, what then does his Work contain? Why nothing but an obscure and involved History of several Cases that fell under his Observation, and a Recital of their Symptoms, and Complaints from Day to Day; and is that sufficient to denominate a Man a great Physician, which
any*

any Relation, or Neighbour, or any sober and experienced Nurse can do as well as the Doctor; that is, tell when the Patient was sick in his Stomach and vomited, when griped, when his Head ached, how he slept, &c. Nay, this was what they actually did, for sure Hippocrates, who had so many Patients to attend, did not continue Night and Day with any one, to set down the Series of his various Complaints; no, he must have received his Information from those that constantly continued with the Patient, or succeeded one another in their Attendance, as our Physicians now are made acquainted with the several Symptoms and Sufferings of the Patient during their Absence by the Relation of those that were about him; and now in all this Performance, what has our Author done more than barely put down in Writing a Narrative of Facts, or Incidents, as they were communicated to him by other Hands? I am certain if Hippocrates had not had the Reputation of curing the Plague in Greece, which I imagine he never came honestly by, he had never been Deified for this Book of Fevers. It is remarkable that this antient Writer makes frequent mention of Fevers, that continued seventy or eighty

Days,

Days, but does not tell us to what Class or Species those Fevers belong; but however since there are no Fevers, such as he treats of, that are of so long Duration, to be met with in this Age and Country, it is a manifest Proof that the Fevers, which Hippocrates saw, were different from those that prevail here; which is directly contrary to the Assertion of a late learned Commentator upon that Writer: And therefore the ancient Authors and modern too, in very remote Countries, should not be of great Value here, for the Nature of Diseases, and the Force of Medicines, are by no Means the same in distant Climates, nor in distant Ages of the World.

As for his Book of Aphorisms, it is like my Lord Bacon's of the same Title, a Book of Jest, or a grave Collection of trite and trifling Observations, of which though many are true and certain, yet they signify nothing, and may afford Diversion, but no Instruction, most of them being much inferior to the Sayings of the Wise-men of Greece, which yet are so low and mean, that we are entertained every Day with more valuable Sentiments at the Table-Conversation of ingenious and learned Men. Many of this
great

great Man's Aphorisms are so poor and vulgar, that they are not greatly superior to such Remarks as these: If a Man eats and sleeps, it is a good Sign. If he refuses Meat and cannot rest, it is bad. If he rejects his Medicines it is ill, nor is it well if he has a violent Pain in his Side. If a Man sprains his Leg it is ill, if he breaks it, it is worse: such as these are many of his certain Aphorisms. But his dubious ones are like a String of logical Topicks, or probable Doctrines in the Church of Rome, which are sometimes true and sometimes false, and as often fail as they hold good.

One would wonder how a Man that knew so little of Fevers, should be qualified for the Cure of the Plague, which is a Fever of the highest and most dangerous Kind: Yet it is reported by Historians that he gained great Fame, and even divine Honours for his Success in subduing that destructive Disease: But it is no Argument of his Humanity and Good-will to Mankind, that he has no where in his Works clearly communicated this efficacious Medicine or Method for the great Benefit of all succeeding Ages. One would be tempted to think there was some Juggle in this Matter, and that he never really
was

was Master of any Medicine that could cure the Plague, but that he came at a lucky Time, when the Pestilence had spent its Fury, and was on the declining Hand, or that he was favoured by some other fortunate Incidents, that moved the People to ascribe the Extinction of that dreadful Disease, to the Care and Skill of the Physician: For my part I do not believe that there ever was any such prevalent Medicine in the Hands of any Man whatsoever; and if Hippocrates was Master of any such Remedy, he must out of Enmity to his Species have concealed and sunk it, that Posterity might have no Benefit or Advantage by it, which surpasses all Belief; had it been so, he ought to have been stripped of his Divinity, and have had his Apotheosis reversed; If he was guilty of such Cruelty, he should have been brought down and ranked with Misanthropes, and the most unnatural and hard-hearted Barbarians; and therefore not being capable of thinking thus of him, I conclude he had no such Receipt.

Van Helmont, a visionary Chymist, pretended to be Master of the Remedies that Hippocrates used in curing the Plague, tho'

he did not discover it in that Author's Writings, but was obliged to an Angel, as he says, for revealing it to him. Athanasius Kircher the Jesuit, pretended likewise to the Knowledge of this Secret, but does not say that he received it from Van Helmont, but affirms that he discovered or thought he had discovered it from some Passages in the Writings of Hippocrates. It is indeed said by a late ingenious Author, that the enthusiastical Chymist, whose Head swarmed with Reveries and Phantoms imparted this Remedy to Kircher, and that Kircher this Way came by his pretended Discovery: This indeed he roundly affirms, and there wants nothing but Proof to make me believe it. Is it credible that this should be true, that Kircher should rely on the Authority of a Vision that appeared to a crack-brained Adept, and that he should never make the least mention of him in this Matter, but affirm that he dug and drew up this Knowledge from the Depths of Hippocrates himself? And had it been otherwise, is it credible that he should submit it to the Perusal of the Society of the Jesuits, and the most eminent Physicians then

in Rome, and that upon this he should receive the Approbation and Encomiums of both, and lastly, that he should be so hardy to dedicate a Dream, and an absurd unphilosophical Account of Remedies, to such a Pope as Alexander the seventh, who was so far from being weak and credulous, that if Matchiavel, who knew him, may be trusted for his Character, he was a very sensible and subtle Man? Now, I say, is it not very difficult after this to conclude, that the Chymist communicated his Vision to the Jesuit, concerning the Medicine which Hippocrates used in the Cure of the Plague, and that he relied upon his Story; especially when no Evidence is produced on the contrary Side of the Question? It is much more reasonable to believe, it being no more than himself affirms, that he extracted his supposed Discovery from the Works of Hippocrates himself. If it be said that he was greatly mistaken, and that what he affirms is not to be found in Hippocrates; be it so, may not Kircher notwithstanding believe that he had discovered the Secret in the Works of Hippocrates, though he was misled and relied upon obscure Passages that would not

bear him out? Is it any Wonder that one that reads that Greek Author should be mistaken, and think that he had found out in him, what was never there and so deceive himself, and afterwards lead others into the same Error? By no means; for I am well assured that a late learned Commentator has published several Discoveries, which no doubt he believes are contained in that Author, which others of as clear a Sight will never be able to find there without Van Helmont's Vision, or some other necessary Machine: And I am ready to make this Assertion good in several Instances; but this is not a proper Place for such a Dissertation; and besides it would swell this Preface, which is too large already, to a yet more immoderate Bulk.

By what I have said, it will appear that the Study and Knowledge of the old Fathers of Physick, can serve no other valuable Purpose, than to gratify the Curious with a Narrative of the low State of the healing Art in antient Times. As for Mathematical Science, which some have endeavoured to interest in the Improvement of Physick, my Judgment is, that as a pro-
found

found Knowledge in it is not conducive to the Service of Mankind, though a moderate one is, it being only the agreeable Amusement of contemplative Men of Leisure, so it is unserviceable to Men of our Profession, who are more concerned with Fluids than with Solids; and therefore I look upon it as an injudicious and vain Attempt for any Man, in order to discover the Nature of Diseases, to apply the Compass to a depraved Mass of Humours, or endeavour to square the Circle of the Blood. Geometrical Skill is rightly employed about Bones, and Muscles, and other solid Parts of the animal Frame, which more eminently belong to the Surgeon's Province; but it cannot be so useful to the Physician, whose principal, though not entire Business respects fluid Bodies. According to the Maxims laid down in the past Discourse, I have compiled the following Treatise, where I have advanced no Notions relating to the Nature, and no Method for the Cure of the Small-Pox, but what are founded upon, and are the Result of long Observation and Experience.

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 Method for the Cure of the Small Pox, but
 what are founded upon, and are the Result
 of my Observations and Experiments.

A Fever is an inordinate Evacuation of



and that, too high and often too swift a
Pulse, Head-ache, and tickles of Stomach,
and is either original in the Blood and the

TREATISE

UPON THE

SMALL-POX.

Of which Kind are the bestick, scorbutick, wann
dring and white Fevers, which proceed from

PART I.

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and the being quick, and the being to a certain

SECT. I.

Of the Nature of the SMALL-POX.

Original or primary Fevers may be truly



It is universally acknowledged that
this great Distemper is to be
ranged in the Class of Fevers,
and I shall enquire to what Kind
or Species it properly belongs.

A Fever is an inordinate Elevation of the oily or fiery Parts of the Blood, by which the balance of Power between the active and governing Principles being broken, a great Tumult and Disorder arises in the animal Oeconomy, attended with immoderate Heat and Thirst, too high and often too swift a Pulse, Head-ake, and sickness of Stomach, and is either original in the Blood and Humours of the Body, or secondary and derived from some other previous Distemper. Of the first sort are all Fevers call'd acute, produced by the Admission of noxious Matter into the Blood, while the solid Parts are sound and entire : The Secondary are but an Effect or Symptom of some other Disease, of which Kind are hectick, scorbutick, wandering and white Fevers, which proceed from some antecedent Distemper, and that chiefly in one of the Bowels, and these being slow and lingering, and protracted to a considerable space of Time, are therefore called Chronical.

Original or primary Fevers may be justly divided into simple, inflammatory, and malignant ; simple Fevers are the Effects of a Disturbance and Breach of the natural Order of the Blood, and a deprav'd Disposition of the animal Spirits, proceeding from an immoderate and irregular Exaltation of the sulphurous or fiery Ingredients in its Composition. Inflammatory are such, as are attended ordinarily with painful Swellings or Eruptions

tions in the solid Parts, when the active Principles of the Blood, by a vigorous Effort, not only resist the Progress of the Fever, but wholly or in part, disengage the Matter of it, and breaking off its Complication force it to lodge in the solid Parts either external or internal. If the Seeds of the Fever, which are cast out in part from the Blood, by reason of their crude and indigested State, are incapable of breathing through the Pores of the Skin, but are caught and entangled in the small Strainers which they are unapt to pass; this Settlement at first, by the continual Supplies and Accession of new Forces, is gradually augmented in Breadth and Size. If the Matter of the Disease be lodged on the Joints, accompanied with a spreading painful Swelling, it produces an acute Rheumatism; if any where on the Surface of the Body, which happens most frequently in the Face, the Effect is an *Erysipelas* or St. *Anthony's* Fire; but if the Matter intercepted in its Passage is stop'd and confin'd in the Glands, and breaks out on the Skin in small Spots at first, which afterwards by Degrees encrease, it lays the Foundation of the Meazles or Small-Pox; and if it appears in a red Eruption, diffus'd in wider Patches on the Skin, it becomes a Scarlet Fever: But if the noxious Matter is discharg'd upon the Muscles of the Throat, it proves a Quinsy, or a painful Swelling of the Tonsils; if on the internal Skin of the Chest or Thorax, a

B . Pleurisy;

Pleurisy; if on the Lungs a Peripneumony; if on the Liver, Kidney, Bladder or Guts, it produces hot painful Swellings, which by Degrees often ulcerate, and sometimes mortify.

The Reason of naming this kind of Fever Inflammatory, is taken from the Custom of Surgeons, who call the Tumours of the Body Inflammations, which accompanied with Redness, Pain, and Heat, proceed by Degrees to Digestion and Maturation: So Boils, Phlegmons, painful scorbutick red Swellings, are term'd Inflammations; and therefore acute Rheumatisms, St. *Anthony's* Fire, the Meazles, Scarlet Fevers, and the Small-Pox, that are attended with Symptoms of the like Nature, I call Inflammatory; for this Name does not arise from the feverish Disorder of the Blood; which notwithstanding it is excessively hot and boiling, yet it cannot in simple and malignant Fevers be said to be inflam'd; for if any Fever upon that account may be called Inflammatory, then all others likewise may be so denominated, since the Effect of all Sorts of this Disease is excessive Heat; and then the Distinction of Inflammatory Fevers would be unreasonable and impertinent. That Distinction therefore depends not upon the Symptoms which accompany the Fever in the fluid, but in the solid Parts of the Body.

A malignant Fever, the third Species above-mentioned, does not only by the excessive
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Power and licentious Encroachments of the fiery Particles upon the other Principles, break the Order and Oeconomy of Nature, in which a healthful State or Constitution is founded, but causes likewise that Disunion and Ruin of some Parts of the Blood, in which Corruption, or Putrefaction does consist. And this is the essential Difference, that constitutes and distinguishes this from all Fevers of another Nature and Denomination; and of this I have discoursed at large in a former Writing, where I made an imperfect Division of Fevers, that is only into simple and malignant, which however was sufficient for the Subject I had then in hand. But it must be here observed, that sometimes the inflammatory Fevers are likewise malignant, by the Accession of noxious and putrid Particles, which they meet with in the Blood. And as this is evident in the worst Kind of Small-Pox, so it often falls out in the Meazles, Scarlet Fevers, acute Rheumatisms, and other Distempers of this Nature, which by the Adhæſion of ill-condition'd putrid Matter, become hazardous, and frequently of fatal Consequence.

The Small-Pox, the Subject of this Discourse, belongs to the second Division, which may be thus describ'd. The Small-Pox is an Inflammatory Fever, accompanied by an Eruption or breaking out of small red Spots, like Flea-bites, that by degrees encrease, and ripening like little Boils, grow full of Mat-


ter, and at length, but not in less than in ten Days after the first Assault, compleat their Course. The intrinsic Nature and Properties that distinguish and diversify this from other inflammatory Fevers, consist in the peculiar Figure and Size of the Matter of it, that make it incapable of being disengaged and separated from the Blood by any other Strainers, or by any other Way, than that before described; and therefore the active Principles of the Blood are, by their natural Oeconomy, necessarily determined to take this one Way, of casting off the unsound Parts for the Preservation of the whole. But what that peculiar Figure, Structure, and Disposition are, cannot be discovered by the sharpest Sight; for this, like other intrinsic essential Differences, that constitute any one Sort or Species of Things, and separate and distinguish it from all others, lying not within the Compass of human Understanding, disappoint our most diligent Enquiries, and triumph over the Endeavours of the acutest Philosopher. We must be contented in this, as in all other Diseases, to understand the Cause by the Effect, and essential Principles by their Symptoms, as we know the internal Nature of the Tree by its peculiar Fruits; and therefore I shall enter upon a fuller and more particular Description of the Small-Pox, that I may shew the Properties and Qualities by which it is discriminated from other inflammatory Fevers,

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This, like all other Fevers, is introduced into the Body by a cold Fit and Shiverings, or Rigours, which after an Hour or more disappear, and are succeeded by an inordinate Heat, and a disturb'd Pulse, both which are soon accompanied with great Pains, sometimes in the Head, sometimes in the Side, sometimes in the Limbs, but much more frequently in the Back, where often they are very acute and scarce sufferable; attended with great Sickness and violent Vomitings, which so nearly resemble a Fit of the Stone, that sometimes the Physician, imposed upon by the Similitude of Symptoms, has pronounced it to be that grievous Distemper. When the enormous Pain in the Back happens at the beginning, it always presages a mortal or very doubtful Event; for the dangerous Nature of the Small-Pox may be foreseen by the Violence of the Symptoms. By this Account of the first Assault of the Small-Pox, before any Eruption appears upon the Skin, it is evident, that the animal Spirits bear the first Onset, and receive the first Impression of the Enemy's Force; which is still more manifest, by observing that Lightness of Head, or Suspension of Reason and Reflection, often goes before the breaking out of the Distemper in Spots.

S E C T. II.

*Of the several Sorts or Species of the
SMALL-POX.*

 HE lowest and most favourable are those of the distinct Sort, which are cast forth upon the Face and Body in broader red Spots, with considerable Spaces between them, and are for that Reason call'd the distinct Sort, to discriminate them from others of a more dangerous Nature, that shall afterwards be accounted for, and not being accompanied with violent Disorders, they make their Appearance most commonly on the fourth Day: And therefore it has been a great Mistake in Judgment, and a pernicious Error in Practice, by warm and cordial Medicines, to hasten and drive out the Small-Pox, and by that Means, to precipitate Nature's Intentions, and disturb her regular Progress; which Custom too much prevails at this Time among many ignorant and injudicious Persons, especially in the Country, who by giving at the beginning Venice-Treacle, Sack, Mithridate, Saffron, and other Medicines of like active Quality, design to promote their coming forth speedily, by which inconsiderate Conduct, they will not suffer the operative Principles of the Blood to do their Duty in their own orderly Way, but spur them on,
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and force them to expel the Matter of the Disease before its due Time, and so often make a harmless Distemper dangerous, and a dangerous one fatal. It is certain, that the longer it is before this Disease appears in Spots, the safer and more favourable it proves; for I never saw a Patient miscarry by the coming forth of the Pustules too slowly, though Multitudes have been lost by their coming out too soon. The Reason of the different Event is this; the diseasie Matter being neither of a malignant Quality, nor in great Quantity, the active Principles of the Blood are not provok'd and excited to throw it off immediately, for fear of being oppressed by it, and therefore have Time and Room to labour, prepare, and qualify it for a due Separation and Expulsion. And Nature generally finishes this Stage in the Space of four Days, as I have said before, by which Time it has subdued and concocted the crude Seeds of the Distemper, and made them fit to be separated from the Blood by the Strainers of the Skin, where they are compelled to stay and stick fast, not being able to pass through the Pores, by Reason of their improper and unequal Size and Figure. The Matter of the Disease being thus intercepted and entangled in the outward Glands, usually appears first in the Face, the Lips, Neck, and Breast, in small red Spots of the broadest Kind in this Distemper, which rise above the Surface of the Body, and gradually

dually encrease in Bulk, by the constant Accession of new Matter prepared by the Blood, and excluded thence to their new Settlement in the Glands of the Skin; so that by fresh Supplies, continually poured on and determined to the Places where the first Matter was lodg'd, the little red Spots swell to minute Boils, and like them are painful and inflammatory, and gradually proceed to a mature or ripe State. There is therefore no Reason that can support the Distinction, which Surgeons lay down between Swellings or Tumours by Congestion, and others to which they give different Names; for all are caus'd by Congestion, that is, the Accumulation or heaping on of fresh Matter, whether that Matter be deriv'd and communicated gradually from the Blood or from the Nerves, whether they arise to a Maturity in a shorter or longer space of Time, and whether accompanied with a Fever or not; for all acquire their Growth and Augmentation, whether by a swift or slow Progress, from the continual access and flowing of new Particles on the obstructed Places, where the Matter of the Swelling was at first laid down: Those indeed, that at first arise and are after fed from the Blood, arrive sooner at their Maturity, than those that receive their Supplies and Reinforcement from the Nerves, and which are very slowly, if at all, ripen'd; but in the manner of their Generation and Increase, there is no Difference,

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all being form'd by Congestion, that is, the gradual Addition or Afflux of new Matter, from what Sources soever it is deriv'd.

In a short Time after the Appearance of this milder Kind of the Small-Pox, of which we are discoursing, the previous Symptoms are in a great Measure mitigated, that is, the Pains in the outward Parts; Headach, Thirst, labouring Pulse, and disturb'd Imagination or Delirium: 'Tis observable, that in Children convulsive Motions, a harmless Symptom, often usher in the Eruption of this Distemper, which confirms what I have before asserted, that the Nerves and animal Spirits are first affected by this Disease; and when the Matter or Principles of it are cast off from the Nerves into the Blood, and are thence after a due Preparation and Digestion thrown out into the Surface of the Body, the Symptoms which before that Time afflicted the Patient in a very great Degree, are removed. Things now having taken another Turn, the Fever is greatly abated, and the Blood and Spirits restored almost to a State of Quiet and Tranquillity; and now Nature as fast as it has concocted and dispos'd the noxious Parts for Exclusion, drives them out to feed the Seeds of the little Swellings or Ulcers, till at length it has entirely freed the Blood, and produced a compleat Harvest, which it usually accomplishes in three Days.

And now the noxious Matter being subdued and entirely expelled from the Blood, Nature, as said, is more at ease, and seems to revive and triumph, as conscious of its own superiour Strength, and the Weakness of its Enemy, which clearly presages a happy Event. During this Stage of the Disease, while all Things are in a greater Quiet and Repose, the Small-Pox being constantly recruited by new Supplies from the Blood, swell to a larger Size, if compared with that of the worst Sort, and continue red and separated from each other by intervening Spaces: But after three Days, which forms the second Stage from their Invasion, or the first from the Eruption; on the eighth Day begins the third, when the small Swellings or Boils begin to acquire a State of Maturity, which appears by their whitening Heads, the Mark of Suppuration; and at this Time the Patient undergoes much Pain: for the greatest Part of these little Boils, as well as the Skin about them, continuing red, fiery, and crude, an extraordinary Effort of the active Principles of the Blood is required to digest them; for as Nature in the first Stage of this Disease, by exerting her Force and Vigour to concoct in some Measure, and dispose the putrid Particles for Separation, was during that Labour and Conflict in a feverish State; so now, when she undertakes to ripen and digest entirely these numerous little Boils, her Attempt must be accompanied with the like feverish Symptoms, which arise from her Strife
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and Contest with the Matter as yet crude and not mastered by Suppuration ; and if the ripening of one common Boil demands so great a feverish Ferment, it is no Wonder that such a mighty Number, though of small ones, dispersed over the whole Body, should be attended with so much Heat, when they grow to Maturity.

This is called the Fever of Maturation, or the second Fever. It must however be acknowledged, that there is but one and the same continued Fever from the Beginning, though under various Appearances of Heat, sometimes greater, sometimes more moderate, according to the several Stages of the Distemper, and the different Exigencies of Nature. The Small-Pox is allowed to be a Fever ; and if that which accompanies their first breaking out, is a distinct Fever, as some have asserted, from that, which attends the ripening of them, then it is manifest, that every Small-Pox is two Diseases, which would be a very harsh and absurd Position. If a Fever, that is simple and not putrid at the Beginning, should by irregular Conduct, or by its own intrinsic Nature, after a considerable Time, degenerate into one that is Malignant, which often happens, attended with the worst Symptoms, could the different States or Stages of this one, be reckoned so many distinct Fevers ?

It is the constant Property of this mildest Sort of Small-Pox, that the Pustules or Boils continue distinct and separate on the Face and

Body, till their whole Course is compleated; and in some Cases they are very few, and large, not perhaps more than eighty or a hundred in all, and sometimes not so many; and they of this kindly Sort are generally judged fully ripened by the tenth Day from the first Illness, or the sixth from their first Appearance; the eleventh Day therefore is not justly fixed for the Completion of all of this Kind, as the eighth Day from the first Attack is not truly assigned as their most dangerous Season. By the continuing of this Sort so long, they are distinguished from the Chicken or Swine Pox, which as they are larger, and often full of Water, so they disappear before the eighth Day, though in that Space they sometimes stay long enough to leave Impressions or Prints in the Skin; and by this it may be known, that is, by their Continuance till the tenth Day, whether the Eruptions or Pustules were truly the Small-Pox or no.

But there are yet higher Degrees of the distinct Kind, of which the highest of all produces such a Number of Pustules or little Boils, that when they are ripe and full of Matter, they almost flow together, and become the Flux Kind; and this Sort proves sometimes fatal, by the great Quantity to be cast forth and digested, as well as by the ill Quality of the Matter, approaching too near to Malignancy.

As Nature begins with low and mean Productions, and arises by several Steps and various

rious Degrees to Beings of the greatest Perfection, which Degrees are diversified by such nice Limitations, that it is difficult to determine where one Kind ends, and another begins; so she proceeds in like Manner, in the Unravelling and Dissolution of the Bodies of Men by Distempers and Diseases, which is not more remarkable in any Instance, than in this of the Small-Pox. The first Sort which I have mentioned is called Distinct; but even in this are found many different Steps or Gradations, as I have suggested above; before you arrive at the worst of this Sort, some consisting of very few Pustules, some of more, and that in various Degrees till you come to the highest; and when you are gotten thither, you do not presently step into the Confluent or Flux Kind, as some have asserted, who make but two Sorts of Small-Pox, the Distinct, and Confluent. For Nature, according to her Custom, does not proceed so fast and hasty; but before it arises to the Confluent Species, it produces a middle Sort between both, that is, when in some parts of the Face and Body the Pustules are Distinct, and in others Confluent; and sometimes it happens that while all in the Face are Distinct, many in the Body shall flow together in Patches, like a redish scorbutick Tetter. If these confluent Patches appear at the Beginning, it is an Argument of an ill-conditioned Distemper, but if they run together and break in upon one another only at the latter End, when the Boils ripen,

ripen, swell, and want room to spread themselves, then their Nature is more favourable, and the Danger less; and therefore it is from Inadvertence and Want of Attention, that those Physicians, who have wrote the History of the Small-Pox, have not taken Notice of this middle Sort as a different Kind from the other two, having the same Grounds and Reasons for doing so, as they have to make a Division between the Distinct and Confluent Species.

As a simple continued Fever consists in the irregular Disposition, and shattered Frame of the Blood, while the sulphurous Particles are exalted to an excessive Power, and an unnatural Dominion over the rest, and so have ruffled and disordered the Mass, which however suffers not any Degree of Putrefaction, that is, any minute Division of its Parts, that destroy their Coherence with each other, and their Union with the whole; so in the distinct Kind of the Small-Pox the Blood is in the like irregular State, but yet free from the Corruption before described: But in the middle Sort, which is partly distinct and partly flowing together, there is a considerable Degree of the Putrefaction which I have mentioned before, and have more fully explained in my Discourse of the *Plague* and *malignant Fevers*; yet it must be acknowledged, that sometimes, though very rarely, it happens, as I have seen, that great Putrefaction accompanies even the distinct Sort, which shews it
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self sometimes in scarlet, and sometimes in blue Spots, dispersed over the Body in great Numbers; and then the Distemper, though it appears favourable in Respect of the Distinction of the Pustules, yet by Reason of the Malignancy and Corruption discovered by the other Marks, it is no less fatal, than the worst of the confluent Kind; and had not those malignant Particles, by some extraordinary Way been separated from the Matter of the Pustules, no doubt the Distemper had been of the worst confluent Sort.

I shall here make only this farther Remark, that in the mildest Sort of the distinct Species there is not any Danger, and the worst of the Confluent are as much incurable, as the Plague it self; and therefore as the first does not require the Attendance of the Physician and the Use of Medicines; so in the last they are unequal to the Disease, and altogether insignificant; whence it follows that the only Province in which the Physician is useful, must be the intermediate Degrees, that is, the most favourable Sort of the confluent Kind, that of a middle Nature, and that of the worst of the distinct Sort.

By orderly Steps we are now advanced to the confluent Species of the Small-Pox, that is, when the Eruptions or Pustules, that appear upon the Skin, break their Partitions and run into one another; this Conjunction often happens in the Face, while the Pustules in the Body are separate and disjoyned, and therefore

fore they are denominated Confluent from the Face only, which is chiefly affected by this Disease: For if in several Parts of the Body many Pustules flow into one, while in the Face they are parted and divided, this is not the Confluent, but the middle Kind; and on the other Hand, if the Pimples run together in the Face, though they are ever so distinct in the Limbs and the Body, this is reckoned in the Class of the Confluent: And in this Kind also are found many Gradations, before we ascend to the most terrible and malignant of all. The least dangerous Sort of these is when the Eruptions appear on the third Day after the first Illness; for the longer they stay before they break out, as I have observed before, the milder and safer they are; for then Nature is allowed longer Time to digest the noxious Matter, and dispose it for Exclusion; whereas it is an Argument of the highest Putrefaction, when Nature, that is the active Principles of the Blood, are forced to attempt a too hasty Separation or Expulsion of the Matter as yet crude and unconcocted, to ease her self of the vast Oppression of the poisonous Ferment, under which she is ready to lye down and dye. Thus the mildest Sort of the Confluent, that approach the nearest in Nature to the distinct Sort, come nearest to them likewise in the Time of their Eruption, which is on the fourth Day after the first Attack, as in this Sort on the third.

The Symptoms, that attend the confluent Kind of all Sorts are as before enumerated, but in an higher Degree, cold Shiverings or Rigours, great Pains commonly in the Back, sometimes in the Side or Limbs, an inordinate, labouring and swift Pulse, Sickness in the Stomach, Vomitings and Strainings to vomit, Thirst, Aching and Lightness of Head, excessive Heat, Oppression of Spirits and great Inquietude, till the Time of their Appearance. If this happens on the first Day, the Case is deplorable, and eludes all the Art and Care of the Physician; and that Sort is likewise very dangerous, which breaks out on the second Day after the first Seizure; for here the Matter of the Pustules being expelled to the Skin, before sufficient Time is allowed for their Digestion, rarely proceed in a regular Manner to a safe Maturity, but continue crude and unconcocted so long, that it protracts the Fever, and extinguishes the Spirits by its malignant Quality, till exhausted Nature is at length subdued and yields to the Enemy. Tho' this fatal Event sometimes happens on the seventh or eighth Day, where the Putrefaction is found in a very high Degree, and next to pestilential; yet most commonly the Distemper is prolong'd to the eleventh, and often to the thirteenth, seventeenth, twenty first and twenty fifth Day, and sometimes yet farther, so that the eleventh is not the decisive Time in this worst Sort.

The Fever in this Species that accompanied the Eruption of the Pustules, and was necessary for that Purpose, is not reduced and mitigated to that Degree, as it is after the breaking out of the Matter in the Distinct Kind, but continues, tho' with Abatement of Symptoms, in a considerable Degree thro' all the Stages of the Distemper; which confirms what I asserted before, that there is no first and second Fever in the Small-Pox, but it is one and the same from the Beginning to the End, and only varied in the different Stages of the Disease, as it is accompanied with greater or less Symptoms; and in their State of Maturation the Fever is more painful and intense in finishing the Small-Pox, as it happens in the Ripening of all inflammatory Tumours; but therefore must not be called a second, that is, another Disease.

It must be here observ'd that tho' the Confluence of the Pustules in the whole Face or at least the greatest Part of it, diversifies this from the distinct Kind; yet the chief Difference lyes in the intrinsic Nature of it, which consists in its malignant Property; for in the mild Sort there is no Putrefaction or destructive Separation of the Parts of the Blood, but only a Violation and Discomposure of their natural and healthful Order and Disposition, while their Connexion is not ruin'd and destroy'd, but is still preserved, though weakened, and continued under the Animal Oeconomy; but in the Conflu-

ent Small-Pox it is a great deal worse, for in this Case many Parts of the Blood undergo such a Solution and Division, that the natural Structure is not only impair'd but in a great Measure broken, and many of the integral Parts are so far separated and putrefied, as to be cast out of the Animal Government, and are so corrupt and lifeless that they cannot be restored to their former Station and Union with the Blood, but must be digested and expelled into the Skin by the sound and active Principles, or Nature must be overcome and fall in the Combat ; and this I call a State of Mortification in the Blood. And it is to be observed, that in the worst Kind of Small-Pox, as in the Plague and high malignant Fevers, the Patients feel little Pain or Sickness, and are insensible of their Danger, and wonder when they are told they have so short a time to live ; which is the Case of those that die of Gangreens or Mortifications in the solid Parts, either external or internal ; for when the Mortification begins, the Pain ceases, and the Patient is actually dying, when on a Sudden he is at Ease, and looks upon himself as in a better Way of Recovery. It is remarkable, that when a Toe or Finger, especially of Persons advanc'd in Years, mortifies from an inward Cause ; tho' the Surgeon takes them off, yet the Parts next above, from which they are severed, will soon undergo the same Fate, and so on ; the Reason is because the cutting off the Member

could not free the Blood from the putrefied Parts, that fed the Gangreen, and therefore it still continues to discharge and lay down in some other Place the corrupt Materials, till it has destroyed the Fabrick. This Observation makes it evident that corrupt and lifeless Particles may be contain'd in the Mass of Blood; which I therefore call a State of Putrefaction or Mortification, as said before; for as I have elsewhere asserted this Notion, so I still believe it is just and well founded upon Reason and Experience.

The Confluent Kind then are diversified from the Distinct externally by the running together of the Pustules and copious Spitting or Salivation at the eighth or ninth Day, and internally by the Corruption of some Parts of the Blood, which in the last Sort is unbroken and entire, tho' shatter'd and disorder'd in its Texture and Symmetry. There are also various Steps and Gradations to be observ'd in this Species of the Small-Pox arising from the different Degrees of Putrefaction, which constitutes this Kind; the lowest and most favourable come out on the third Day distinct at first, and almost as large, as the Sort of that Denomination, but after some Time they run together, when in their Growth they swell, and by enlarging their Borders, they break the thin Fences that separate them from one another, and shew themselves to be of the Confluent Sort. In this Species the Pustules are often more elevated and bold, and being con-

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stituted of less noxious or malignant Matter, they are not accompanied with violent or threatening Symptoms, and they generally compleat their Course with good Success, which most commonly is done on the eleventh Night after the first Attack, when many likewise expire; that Period of Time then is only properly assigned as commonly decisive in the lowest Degree of the Confluent Sort.

The next Gradation in the Confluent Kind is, when the Eruptions are smaller and more numerous, which proceed from higher Degrees of Corruption; that is, when many more Ingredients of the Blood are divided and ruin'd than in the former Degree. In this Case the Pustules are so small, so many and so contiguous, that they soon flow together, and in a shorter Time than the former; and this is the Sort that is indeed dangerous to the Patient, and most tries the Skill and Judgment of the Physician; for now there appears a great Variety of grievous and formidable Symptoms, violent Vomitings, great Head-achs, Delirium or Suspension of Reason, obstinate Wakefulness, excessive Heat, great Inquietudes, and often laborious and short Breathing. The ninth Day from the first Invasion the Pustules rise higher, and the Face swells and grows redder, the Fever that continued all along, is now augmented, and without Reason, as I have said, is called the second Fever, it being the same with the first, only higher rais'd. The Pustules usually
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in their State of Maturation swell the Face very much, and turn by degrees to a dark brown Crust or general Scab, which often continues undigested and unseparated from the Skin many Days: So that in this Case, which is the chief Province of a Physician, it is an Error to assign the eleventh Day as decisive of the Event; for it often happens that this is not the determining Period in this Kind of Small-Pox; for all Practisers must know that the Small-Pox of this Sort are most frequently carried on beyond those Limits for many Days; and after the Face is altogether, or almost, clear'd of the Pustules, the Fever will often survive and maintain its Ground a great deal longer, and till that be reduc'd, and the Pulse restor'd to their natural Standard, the Distemper cannot be looked upon as judg'd and concluded; for after the eleventh Day the Fever proves often fatal, sometimes by terminating in Convulsions, sometimes in a hectical and consumptive Wasting; and it is absurd to say, that the Patients in such Cases did indeed escape the Small-Pox, but dyed of Convulsions, or, a Consumption, after they were recover'd from the other Disease whence those Symptoms proceeded.

Sometimes the Confluent Crust, or general Scab on the Face is of a dull, leaden Colour, which it acquires from the great Crudity and ill Condition of the Matter, of which they are form'd; and I have known that the Confluent Pustules of this Aspect have

continued on the Face more than three Weeks, before they have been fully digested and separated from the Skin.

Sometimes on the ninth, tenth, and eleventh Day, during the Maturation, the Face, from the Colour of the digested Matter, beneath the Skin, grows pale, and sometimes white as a Sheet, with little Swelling or Elevation of the Cheeks, Lips or Nose, which is a Case always very dangerous, and most commonly fatal; tho' I acknowledge I have seen some escape in a very wonderful Manner, when not only the Face has had this Aspect, but even the Arms and Wrists have turned white by the purulent Matter, and the Confluence has been so great, that the concocted Contents have hung down in Bags like Bladders rais'd by Blistering Plaisters, which Bags being cut to discharge their purulent Matter, the Muscles were left all raw and uncover'd: But it sometimes happens that there is little or no Protuberance, or Swelling of the Confluent Eruptions, but the Face lies flat and equal, while the minute, and scarce distinguishable Pustules growing dry only turn the Skin into the Likeness of an old Piece of Parchment, or dull *Russian* Leather, and even then the Patient has sometimes recover'd.

Another important Discriminating Property of this Kind of Small-Pox is the Spitting or Salivation that Nature raises usually about the eighth or ninth Day from the first Invasion,
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and this is so constant and so necessary, that it seems equally required for the Recovery of the Patient with the ripening of the Eruption it self; and this Evacuation by the Gland of the Mouth is more or less copious, and continues a less or greater Space of Time according to the different Degrees of Putrefaction in the Blood, a considerable Part of which is destin'd to be excluded by these Sluices for tho' the greatest Portion of the corrupt or mortified Particles of the Blood and Humours are expelled by the sound and active Principles into the external Parts of the Body, yet a great Quantity of it, which is not by Reason of its disproportion'd Bulk and Figure capable of being determin'd and transmitted to the Surface of the Body, is strain'd through the Salival Glands, and carried off by copious Spittings; as Nature as well as Art in some other Cases discharges the noxious Humours that cause Distempers by a Flux of Humours issuing from the Glands of the Guts; so by this inverted Purgation, performed by the Strainers of the Mouth, the Blood is freed in a great Measure from the Matter of the Disease mingled and diluted with the ejected *Serum*. This Evacuation, I have said begins usually about the eighth Day, and continues according as the Exigencies of Nature require, that is, till that Part of the purulent Matter which is communicated to it, is discharged: But sometimes this Province of Salivation is executed in an irregular Manner both

both in respect of its Rise and Appearance, and also of its Continuance; for sometimes the Salivation is suspended, even till the Scabs on the Face are dry, and sometimes longer. I remember an extraordinary Case of a Lady, that had no Spitting till the fourteenth Day, and till she was recovered and sat up, and then the Salivation began and continued about a Week; and I have observed likewise, this Salivation in some others, that appeared at its usual Season, has after the fourteenth Day been greatly augmented, and continued many Days.

The Swelling of the Face, which usually begins on the eighth Day in the distinct Kind, happens most commonly on the ninth in this Sort; and the greater the Swelling is, the greater Prospect there is of the Patient's Recovery. This Swelling arises from the inflammatory little Tumours that flow together: It is the Nature of all Inflammations, to cause Prominence in the Parts affected: A Boil, a *Phlegmon*, an *Erysipelas*, or *St. Anthony's Fire*, *Anginas*, Rheumatisms, or scorbutick Inflammations, are all accompanied with Swellings in the Places where they happen; which Tension, that is, the Stretching of the Fibres beyond their Staple, creates Pain; and the Swelling is produced by an afflux of Humours to the Part, from the Vellication of the Muscles, or Tendons, by the sharp and crude Matter of the Distemper; and the immoderate Heat is occasioned in the solid Parts

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affected, as it is in the fluid ; for as an unnatural feverish Heat is raised by the Conflict in the Blood, while the active Principles labour to digest, and exclude from the Mass, the degenerate and corrupt: So in the solid Parts there follows excessive Heat, as well as Pain, while those sound and active Parts strive to concoct, and bring the Matter of the Distemper to Maturity and Suppuration ; and when this is compleated, the Heat in the inflamed Member, and the Fever in the Blood, quickly disappear. It is not only the Face that swells and continues so, till the Suppuration is compleated, but wherever the inflammatory Pustules are Confluent, they swell the Part in the same Manner, and for the same Reason, as they do in the Face: This happens in the Hands, and Feet, and other Members, whenever the Quantity of the Pustules is very great, and their Quality malignant. The Hands begin to rise, when the Swelling in the Face begins to subside, which usually happens on the eleventh Day ; for the Pustules in the Body, the Hands, and Feet, coming out about thirty Hours after those of the Face, they are in Proportion, as slow before they reach Maturity. An eminent Physician, that has deserved well of the Profession, by his History of the Small-Pox, and his Method of Cure ; though as all human Works are it is imperfect ; observing, that as the Swelling in the Face abated, that in the Hands began ; imagined that the Matter which

caused the first, was in some Measure translated to the last, and so was the Cause of it; and this Opinion has generally obtained among the Gentlemen of the Faculty. But this I look upon to be a great Mistake; for though the Swelling of the Hands immediately follow the sinking of the Face, yet it follows not as an Effect from a Cause, but as a Consequent succeeds an Antecedent; for that Swelling necessarily arises from the inflammatory Pustules in the Hands themselves, which at that Time come to Suppuration, as those in the Face swelled by their own Heat thirty Hours before, and not from any Matter communicated to it from the Face: For when the Digestion is fully, or almost completed, and the Inflammation ceases, the Swelling does of Course subside; as it plainly does in all Kinds of inflammatory Cases whatsoever, that come to Suppuration; as in Boils, Phlegmons, scorbutick Tumours, &c. and when the Feet swell, as they often do, if the Number of the Pustules is great by the Anguish and Pain affecting the Fibres, this Symptom does not proceed from the Matter translated from the Face, or Hands, to the Feet, but from the Suppuration of their own Pustules, as the Face and Hands swell by the ripening of theirs: If a Boil is digested and ripened in the Arm, and another, that rose two Days after in the Thigh, begins at this Time to swell to a greater Degree by the Pain and Suffering in the Maturation; will it not

be absurd to say that the Matter which caused the Swelling of the first, even after it is concocted and ripened, is translated to the last? And the like may be argued from other inflammatory Tumours, that should in Time succeed one another.

And as there is no Need to fetch any noxious Humours from the Face, to furnish out Materials for the Tension of the Hands, the Heat and Anguish of their own Pustules being abundantly sufficient for that Purpose, as well as those in the Face were able to cause the Protuberance or Elevation there, so no Manner of Conveyance, no Road or Passage, can be accounted for to favour this Supposition: For the Matter must of Necessity retreat from the Cheeks into the Blood, and then the Consequence will be, that the Blood must suffer a new feverish Conflict, while Nature struggles with these returning malignant Particles, and exerts its Force to exclude and send them to the Skin, which Event however does never happen, for the Fever at this Time is generally abated: And why should the Blood expell it, to augment and raise the Pustules in the Hands, rather than those in the Breast, or any other Part of the Body? But to put it out of Doubt, that Confluent Pustules may swell and ripen of themselves, without any Communication of Materials from the Face; I have known in the middle Kind of Small-Pox, which I have described before, that the Pustules in the Face have

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continued all Distinct, through their whole Course, with little or no rising; and at the same Time one of the Arms, on the Outside from the Shoulder almost to the Elbow, was covered with an infinite Number of small Pustules with the least Space imaginable intervening, which soon flowed together, and the Arm swelled in the usual Time, like the Face in the Confluent Sort; and other such Instances I have seen in those of the middle Kind, and no doubt other Physicians have observed the like. I conclude, that all the Pustules in whatsoever part they arise, whether they continue separate, or run into one Surface, rise, grow, ripen, and acquire Suppuration by their own native Heat and Activity, and swell, and are digested independently on one another, and without the Translation of any Matter, from those of one part of the Body to those of another.

But to return to the History of the lowest Degree of the Confluent Kind, where many Patients escape, and many miscarry; Besides the sad Train of Symptoms, which I have described before, that attend this Sort; there is another more grievous, that is sometimes added to this formidable Retinue, that is, scarlet, bluish, or purple Spots, sometimes in a small Number, which often disappear before the Maturation of the Eruptions, and then the Patient sometimes escapes; but if those Spots are numerous and of a deep Colour, as in spotted Fevers, they are usually fatal, and therefore

therefore I reckoned them among Symptoms of the most dangerous Nature.

The highest Kind of the Small-Pox, are those that appear on the Skin the first Day of the Attack, and the next in Malignancy are those that break out the Day following; the Symptoms peculiar to this dangerous and usually mortal Species, is a violent and unsufferable Pain most commonly in the Back, with grievous Vomiting, by which it imitates a sharp Fit of the Stone, and has sometimes imposed upon the Physician, as well as the Standers by, and made them conclude it was that Distemper: But sometimes this previous acute Pain is felt in the Side, and sometimes in the Limbs. Another discriminating Property in this Case, is the vast Number and minute Size of the Pustules, that are scarcely elevated above the Skin, and being continued and united for the most part, especially on the Breast, form the Appearance of a scarlet Fever, or St. *Anthony's* Fire, such is their redness and unequal rough Surface, like that of the *Seal's* Skin; and this Sort has often been mistaken by inattentive and undistinguishing Practisers, for the Meazles, the ranker Sort of which are more protuberant, or rise higher than this Kind of Small-Pox; this Profusion and enormous Quantity of Pustules, so small, that their inequality or unevenness is scarce perceptible, overspreading almost the whole Body, especially the Breast, as well as the Face, may at first Sight be pronounced

nounced fatal; their Nature being so malignant, and their Number so immense, that it is not possible for the active Principles to digest and bring them to Maturity, especially if at the same Time a Multitude of scarlet or livid Spots are interspersed and scattered over the Skin, particularly in the Neck and Breast, for this shews the Putrefaction to be in a very high Degree. This Symptom therefore presages the greatest Danger, for notwithstanding, as I have said, a few such Spots are sometimes consistent with Recovery, as well in the Small-Pox, as malignant Fevers; yet when they appear in great Numbers, they discover such a degenerate State of the Blood, as cannot be repaired by Nature, though assisted by the greatest Art. Another Symptom belonging to this Kind, is a Discharge of Blood by Urine, and sometimes by other Sluices, as by the Seat, by the Mouth, and by the Eyes; but as to bleeding at the Nose, it is sometimes very useful by preventing or abating the feverish Heat, and never so dangerous, as such Evacuations from other Parts, which is an Argument that the Frame and Contexture of the Blood is not only shaken and disordered, but dissolved and broken into minute Atoms; and being thus severed, and its Continuity ruined, it is ready to issue through the Glands, and pass thro' any Strainers of the Body without Opposition, especially those of the Kidneys; and this is a Discovery of the greatest Putrefaction, or a state of Mortification in a great
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part of the Blood ; and therefore the Small-Pox, as well as malignant Fevers, attended with such a Discharge, is generally incurable. It is true, if this Symptom happens at the Entrance of this Distemper, and that in a moderate Degree, it will sometimes gradually abate before the Time of the Suppuration, and the Patient may recover ; and the same may be said of black or dark coloured Urine : This very ill Sort, from which some few however make their Escape, come forth upon the Skin on the second Day ; but of those on whom the Pustules appear the same Day, that the Illness begins, I do not believe, as I have said, that any recover.

I have now done with accounting for the several Species of Small-Pox, but I must yet add one Sort, according to the Opinion of some, which is indeed very wonderful ; and that is a Kind, which is not accompanied by any Spots, Pustules, or Eruptions whatsoever ; when the wise Doctor tells the good People that it is the Small-Pox within, and would have appeared outwardly, if Nature had been strong enough to have thrown out the Matter ; but she being defective and unequal to the Task, the Small-Pox without appearing destroys the Patient in a very clandestine Manner. This is certainly very surprising ; for here is a Disease without Symptoms, which is somewhat extraordinary : The Doctor fancies it had a great Mind to have been the Small-Pox, but being disappointed of that Intention,

Intention it kill'd the Patient in such a malicious and secret Way as no Body knew what did hurt him : But can any Man know this would have been the Small-Pox ? why might it not more probably have been a very malignant Fever, that took off the Patient in so few Days ? Besides, if it be considered, that Nature pushes out the worst and most fatal Sort of Small-Pox in Spots or Pustules, even on the first or second Day ; so hasty is she to expel the malignant and pernicious Matter ; and why should it have such Patience as to linger three or four Days without casting out in Spots this pretended unappearing Small-Pox is unaccountable. Let this be tried in parallel Cases ; how odly would it sound to say that a Patient died of a St. *Anthony's* Fire, that never scorched, or so much as appeared on any Member of the Body, or that he had a Boil, or Phlegmon, or a Scorbutick Inflammation, that never redened, swelled or pained any Part whatsoever, or a Cutaneous Disease, by which however the Skin was never in the least affected ? Having now given an Account of the Nature of the Small-Pox and its proper Characters, and divided it into its several Species, and laid down the peculiar Properties, that discriminate and distinguish one Sort from another ; I come to discourse upon the most proper and effectual Method of Cure in this great Distemper.

S E C T. III.

Of the Method of Cure.

 N the most favourable Sort of the Distinct Small-Pox, which are few in Number and mild in Quality, Nature her self, as I have before observed, is able to cure the Distemper, and needs not call the Physician in Aid; as on the other Hand the most Malignant Confluent Kind will hear no Reason, but puts all Methods and Medicines out of Countenance; and in these deplorable Instances the Physician will shew his Judgment and Honesty by declaring that the Case is above the Reach of Skill and Remedies, and inconsistent with Hopes of Recovery, which is more fair and honourable than for the securing of his Reputation and keeping up an Opinion of his Skill and Judgment, to act a double Part by telling the Patient, and a few Friends within Doors, that he will certainly live, and all without Doors, that he will certainly die. It is then in the intermediate Degrees that the Doctor's Province lyes, and in those dubious, and sometimes very difficult Cases, by a skilful and judicious Conduct, he may be very beneficial to Mankind, whilst many Times he relieves the Patient by a proper and skilful Method, who would have perished, if left alone to un-

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assisted Nature, to an ignorant and injudicious Practiser, and much more to the Care and Wisdom of a confident Nurse, often more destructive than the Disease it self; for Nature has many Ways to struggle and shift for Life, would these rash or weak Pretenders to Knowledge stand by, and let her have fair Play.

When any Person is attacked with the Symptoms that usually precede the Small-Pox, *viz.* a great Heat, a swift and labouring Pulse, Pains in the Back, Vomiting, Sickness and Head-ach, it is advisable he should be let Blood to ten or twelve Ounces, or more, if the Pulse are strong and the Patient young, and of a vigorous and florid Constitution: a gentle Vomit, and a lenitive Glyster are likewise very proper, if there is Room and Time to administer these Remedies.

If it proves the severest Kind of the Distinct Small-Pox, where, tho' the Pustules continue separate, they are however very numerous, and therefore require great Labour from the active Principles to digest and bring them to Perfection, which must be attended with great Heat, especially when they come to Suppuration, the greatest Danger will be lest the Patient should be overset by the prevailing Fever; and therefore all proper Means should be used to guard against it, and for this End the cold Regimen is here to be preferred before Cordials and Alexipharmack Remedies.

When proper Evacuations previous to the Eruption have been preferib'd, there is little to be done for four Days after it ; for the Fever, during that Time, is most commonly mitigated, and the Heat suspended till about the eighth Day, when the Maturation beginning the Fever rises to a higher Degree, and then in this last Stage of the worst Distinct Sort, cooling and diluting Means and Medicines, such as Juices of Lemons and Oranges, Spirit of Vitriol, in common Drink, ought to be administred more plentifully to suppress and reduce the excessive Heat, or, at least, to prevent the Growth of it : And in this Season likewise quieting Remedies, of which Diacodium, or Syrup de Meconio, are found to be the most friendly and successful, may be given in a greater Degree, or more frequently, especially at the Time of their Turning, when Nature is at her greatest Plunge, and obliged to exert her utmost Vigour for making a decisive Effort ; at this Time an Ounce of the Syrup before mentioned given early in the Evening, and repeated six Hours after, will be proper and beneficial ; and if five or six Drops of Spirit of Vitriol be added to it, it will yet be more advantageous, since those Drops will make it more effectual for abating the immoderate Heat, as well as render it more agreeable to the Stomach.

During this Stage, when the Small-Pox are coming out, or only rising and enlarging their Bulk, Medicines of no Kind are demanded,

manded, and Cordials are forbidden for fear of inflaming the Blood, and agitating the Spirits, and so disposing them to a severe and dangerous Fever, while the Pustules are in ripening : But in this calmer Season, when the violent Symptoms, which usher in the Eruptions, are removed, and those that are concomitant to the Digestion or Suppuration do not yet appear, Nature is to be trusted with doing her own Work, and the Blood is only to be attempered and diluted with cooling Liquors to prevent excessive Heat : But if obstinate Wakefulness should afflict the Patient, an Ounce of Diacodium should be given at Night, and repeated if there be a Demand for it ; and if a Looseness happens ten drops of Liquid Laudanum, or a spoonful of Diacodium should be given in any convenient Liquor after every such Evacuation. When the Heads of the Pustules begin to whiten, and fill with the digested Matter, and the Heat grows more intense, then an Ounce of Diacodium, with five Drops of the Spirit of Vitriol, and two Ounces of Barly Cinnamon Water, will make a proper Draught to be administered every Night. The Juices, mentioned before, of Oranges and Lemons should be squeezed into all the Patient's Drink, and sometimes Spirit of Vitriol, to the Quantity of five or six Drops should be given in the same Manner interchangeably with those acid Juices. If at the latter End the Patient should be dispirited,
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and the Pulse grow weak and depressed, which however seldom happens, then moderate Cordials are demanded, and will be very useful, such as Diascordium, Confection of Allkermes, Contrayerva-Stone, Gascoign's Powder, &c. to the Quantity of half a Dram, which should be repeated as the Exigencies of the Patient require. It is true, that those Medicines only have hitherto been accounted Cordials, that being of a warm and generous Nature, revive the fainting and languid Spirits; but if it be considered, that when the Oppression and Disorder of the Spirits proceeds from a high and swift Motion and excessive Heat of the Blood, those Remedies also may be truly stiled Cordials, that by reducing the exorbitant Heat, and bridling the Celerity of the Pulse, bring them down to their due and healthful Standard, as well as those that raise them when they are too weak and much below that regular State; for these Remedies do as much relieve Nature when it deviates from its due Proportion of Heat and Motion, by being rais'd too high, as the warm and active ones succour and befriend it, when it is beaten down, and the Heat and Motion are below Standard; and therefore the cooling and diluting Means, that restrain the Effervescence of the Blood, and the Fury of the Fever, are as truly cordial and as much Friends to Nature in this Situation, as on the other Hand generous and Alexipharmack Remedies can be by raising and invivening

livening the Spirits, when they are in an opposite languishing State; and therefore the warm and cool Medicines are equally Cordials, that is they succour Nature alike in different Exigencies.

As to the Method of Cure in the Confluent Kind, it has been of late Years much disputed whether the cold or hot Regimen, as they are called, is the most proper and beneficial. It is true, that our most celebrated Physicians before Dr. *Sydenham* universally declared for the last; but that Doctor having taken a Resolution at his first entering upon the Practice of Physick, as he himself assured me in Conversation, to act directly contrary in all Cases to the common Method then in Fashion among the most eminent Physicians, (and he told me his Reasons for it) in Conformity to the Design did in the Management of this Disease, as well as others, oppose the common Method of the Physicians of the Court and City; for whereas they set themselves with the utmost Vigour to subdue the Malignity and Putrefaction, which, in their Judgment, tainted and dissolved the Blood in this Kind of Small-Pox, by the use of the most generous and active Medicines, such as Venice Treacle, Virginian Snake-root, Contrayerva, Zedoary, Saffron, Volatile Salt of Hartshorn, Powder of Viper's Flesh, and the like; Dr. *Sydenham* being, as said above, determined to oppose their whole Scheme of Practice, fell upon the cold Regimen

gimen, and discharged all the Train of warm Alexipharmack Remedies, such as above enumerated, and instituted a Method of Practice Reverse to this; for he opened not only the Curtains round the Bed, but often the Windows likewise to let in fresh Air to the Room, took the sick Persons out of Bed, and plied them constantly with diluting and attempering, or with acid and cooling Remedies: In the mean Time he often thro' the several Stages of the Distemper, prescribed six Drams, or an Ounce of Syrup of white Poppies to be taken in the Evening, or at the Beginning of the Night, and to be repeated, and the Dose to be increased as great Wakefulness and Inquietude should demand; and this Method has much obtained since his Time.

To compromise the Controversy between the contending Parties, and to set the Matter in a true Light, it must be considered, as I have explained my self in the former Part of this Discourse, and that of malignant Fevers, that there is so great a Solution and Disruption of some Parts of the Blood, sometimes in a lower, sometimes in a higher Degree, as makes them incapable of being reunited and consolidated again with the sound Parts from which they are broken off; but they must be digested and expelled, or Nature must sink and fall in the Attempt; and in this Disposition of the Blood consists what we call Corruption, or Putrefaction, and which for its Conformity in all its Properties to a Gangreen

green in the solid Parts, I call a state of Mortification, as I have often said before.

Now it is very evident, that in such a State, two Intentions of the greatest Importance are to be persued; one is to encourage and invigorate the active Principles of the Blood, and enable them to subdue and concoct the putrid Materials, and exclude them from their Fellowship: The other is to contract and bind up the loose Structure and Frame of the Blood, and hinder the Dissolution and Rupture of the Parts, and so prevent the Progress of the Putrefaction; which will likewise be a prevalent Means to reduce the excessive Heat that arises from the Conflict between the sound and active Parts, and those that are corrupt and putrefied: Now upon this it will appear, that the contending Parties are both in the right, and both in the wrong. Those that insist upon the hot Method, act very reasonably, in prescribing proper Remedies to reinforce Nature, and assist the operative sound Parts of the Blood; that by this Means they may be more prevalent and successful in digesting and expelling the putrid and malignant Matter of the Disease; and by these generous Recruits, and timely Succours, they answer the first important Intention abovementioned. And the Patrons of the cold Regimen, by plying the Patient with astringent, cooling, and diluting medics, serve the other Exigence of Nature, by contracting and strengthening the Contex-

ture of the Blood, and preserving the Integrity and Continuity of its Parts; by which Means a Check is given to the farther Solution and Seceſſion of them from each other; by which Means likewise, the exceſſive Heat is mitigated and reſtrained. Thus far they are both in the Right: But then they are both defective and erroneous, while the Gentlemen of the hot Regimen depend wholly, or chiefly at leaſt, on their warm and active Cordials, oppoſed to Putrefaction; and the others rely too much, if not entirely, on the cooling Method. I know it will be ſaid, that cooling Medicines, ſuch as Juice of Lemons, and Spirit of *Vitriol*, are very prevalent Medicines againſt Putrefaction; and I allow that they are ſo, in their Manner of Operation, which I have explained before; that is, by confining and binding cloſer the ſound Parts of the Blood, and ſo keeping them together, and preventing their farther Separation, in which Putrefaction conſiſts: But when many Parts are already corrupted, diſſolved, and thrown out of the Structure of the Blood, and cannot be re-united ſo as to recover their former Texture and Cohesion, it is the Province of active, generous, and enlivening Remedies, in this Juncture, to aſſiſt Nature in digeſting and ſending out into the Skin theſe ruined and mortified Particles, which cannot be performed by cold and aſtringent Medicines, that will rather ſuppreſs and abate the Vigour of the active Principles,

principles, and so far reduce the vital Heat, as to disable it to discharge the great Office and Duty of Concoction and Exclusion; and therefore in my Judgment, the Gentlemen of the hot Method, and those of the cold, are singly, but half Physicians for the Confluent Small-Pox, and both united and blended together, would make a compleat Practiser: One that consolidates the hot and cold Method, and unites in his Prescriptions cooling, astringent, and diluting Remedies, with warm and generous Cordials, in equal, or different Proportions, as the Relief of Nature requires, that is, as the Pulse are more to be quicken'd, animated, and inspirited; or on the other Hand, to be reduced, and brought to a lower State, which likewise is the Case of malignant Fevers. And having thus laid the Ground-work, I proceed to the Method of Cure in this Disease, which is so dangerous, and often destructive, especially to Persons of higher Rank; and had the Method of Cure, that I shall lay down, been observed, I believe this Fury had not made such Havock, nor have triumphed in such a terrible Manner, with her Spoils and Graves about her, as of late she has done; because I have seen many Patients under the most formidable and threatening Symptoms of the high Confluent Kind, evidently rescued by this compounded, or complex Method, from the very Jaws of Death, as hereafter I shall relate, without any Prejudice, or any Respect

of Persons, but from a sincere and impartial Intention of being beneficial to Mankind.

The Method of Cure, in the Confluent Kind.

At the first Attack of the Disease, the Patient ought to be let Blood to a considerable Quantity, twelve or fourteen Ounces, especially if the Person is of a robust and florid Constitution; and the Physician should not be discouraged from giving this Advice, notwithstanding the Pulse should be at first weak and low, for that often proceeds from the Oppression of the active Parts of the Blood, which being too much agitated and expanded by the feverish Ferment, labours for room to extend its Current, that it may move along the Veins with greater freedom: And therefore, when by bleeding it is ventilated and made easy in its Circulation, the Pulse are so far from being weakened and lower'd, that they rather rise and beat with more strength and regularity. Nor should he forbear advising the Patient to be let Blood, though some scattering Eruptions should appear upon the Skin, for fear the Small-Pox should be checked, or retarded in their coming out; which is the Reason alledged against this Practice; for this is merely imaginary, and upon frequent Experience, I know the contrary to be true; and indeed, it is very agreeable to Reason, that when the Blood-Vessels are in a good Measure eased from the Violence and Confusion

sion that they feel from the immoderate Dominion of the inflammatory Parts, and the excessive Heat of the whole Mass, by which it gains more space and liberty of Circulation, it should better perform its Duty in concocting, and casting out of its Bosom the Matter of the Disease; and besides, should it be supposed, that the letting of Blood in the Season I contend for, did indeed bridle and keep back the Small-Pox from crowding out so hastily, as otherwise they would do, would that be any detriment to the Patient? No, on the contrary, it would be very beneficial, for as I have observed before, no Person suffers by the coming out of the Small-Pox too late, though Multitudes do by their coming out too soon; for then they break forth before Nature has had sufficient Time to labour, and digest the Matter, too hastily expelled. Hence it appears, what a mischievous Custom, as I observed before, prevailed formerly among Persons of better Fashion, and still continues among the People of meaner Condition, especially among the ignorant Inhabitants of the Country, to administer strong Wine, and hot Cordials, such as *Saffron*, *Venice Treacle*, *Methridate*, *Diascordium*, and other Medicines of the like active Quality, with Intention to help Nature to drive out the Pustules, which is to stimulate, and push her on to throw off the crude and unconcocted Matter before its Time, which she was too apt and ready to do before, for her present

present Ease, but to her greater Danger afterwards. This is so pernicious a Practice in the first Stage of this great Distemper, that all Men should be made acquainted with it; and here it is certain, that the cold Method is infinitely to be preferred before the hot, for here to prescribe *Orvietans*, *Sir Walter Rawleigh's Confection*, generous *Treacles*, and *Cordial Powders*, is to employ Oyl to quench an Inflammation, and for composing Strife, and Sedition begun in the Blood; to send in auxiliary Incendiaries, which will succour and animate the licentious and ungovernable Parts, and thereby propagate the Disorder and Confusion, intended to be controlled and appeased. And this Method of letting Blood very early, even after some Pustules begin to appear, is the more justifiable, if we reflect, that when one bleeding before the Eruption has not relieved the Patient, but afterwards, the Heat of the Fever is very exorbitant, and the Pulse continue to run swift and high, a second has been experienced to be beneficial and successful; but this does by no Means warrant the Physician to order his Patient to be let Blood at the height, or about the Conclusion of the Disease, upon Pretence of reducing the Fever: For in the first Case, that is, in the first Stage of the Distemper, Nature is strong and spiritiful; and therefore not able only to bear Evacuations, and particularly bleeding, but does likewise require it for her necessary Service,

to cool the Blood, and gain Ease by the Discharge of noxious Humours; but in the latter End, Nature is tired and exhausted, and ready, for want of Strength and Vigour, to lye down under her oppressive Burthen; and the Doctor, that would now think to raise her Power and Activity by expensive Evacuations, must have a peculiar Turn of Thought, much out of the common Way of reasoning; but of this hereafter, when I shall discourse of this Subject in its proper Place.

Twelve Hours after the Patient has been let Blood, a Vomit may be usefully prescribed, to evacuate the noxious Humours of the Stomach, that may hinder the Operation of Remedies, or by being absorbed by the Blood, may joyn with the Matter of the Disease, and encrease the Putrefaction, as well as to agitate and shake the Frame of the Nerves, and express from the Glands their putrid Contents. The Form of the vomitive Medicine may be this as follows: Take of the vomitive *Indian Root* half a Drachm; of *Oxymel Scilliticum* an Ounce, or six Drachms; of *Milk-Water*, or that of *Carduus*, three Ounces; make it into a Draught, and let the Patient, to promote its Operation, after half an Hour, drink plentifully of the Infusion of *Carduus Leaves* in spring Water boiling hot, when it becomes cool enough for drinking: But if the sick Person vomits freely of himself, then Dilution, with two Quarts of the Infusion I have mentioned, will be sufficient.

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If by Means of the *Oxymel*, the Draught works likewise downwards, then a Clyster will be unnecessary, otherwise after two Hours, that Remedy should be administered to empty and cool the Bowels, and especially if it be considered, that the Patient is likely to continue bound many Days after: The Materials of the Clyster may be Milk and brown coarse Sugar; which I prefer to other Forms, because it is the most cooling and therefore most refreshing in an inflammatory State of the Blood.

Sometimes about the Time of the Eruption, the Urine is of a dark Coffee-like Colour, which happens either from the high Degree of Putrefaction, as it often falls out in malignant Fevers; or from some grumous extravasated Drops of Blood coagulated in the Parts where they are lodged, which is often a Symptom likewise of the Stone: And sometimes, in this Stage of the Distemper, the Urine becomes bloody, which is one of the most fatal Symptoms that attend it; and it is very seldom, if ever, cured, if it happens in the middle, or later end of the Disease: The Cause of this terrible Symptom is the great Disruption and Solution of many Parts of the Blood, as I have been often obliged to repeat which being broke into minute Atoms, have lost their Connexion with the Mass, and with one another; and being now only contiguous and not united, they pass easily through the Pores and Meshes of the Strainers, which
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while they kept their Coherence and Continuity, by Reason of their disproportioned Size and Figure they were unable to do; and in this high Degree of Corruption, there is such a Separation and Comminution of the Parts, that they rush through many other Emunctories and Sluices of the Body, as well as the Glands of the Kidneys, as I have before observed. But if this Evacuation happens at the Beginning, it does not certainly presage Death; for sometimes I have seen the Patient, notwithstanding, recover: And the Physician should take Care, not hastily to pronounce this a deplorable Case, especially if the Patient is one of the fair Sex: The best Method to be observed in this Case, in which letting of Blood is forbidden, in my Judgment is that, which restrains, binds up, and holds together, the Parts of the Blood, and so preserves their Integrity and Coherence; for it is the Loss of that, as I have explained, that occasions this bloody Evacuation; and the following Remedies, which have a greater Proportion of cooling and astringent Ingredients, may for this End be prescribed.

Take of Conserve of red Roses vitriolated half a Drachm, of Bole-Armoniack, and Dragon's Blood, each six Grains, of Sal-Prunella, Grains twelve, of Cochineal, and Saffron, each five Grains, make it into a Bolus, with Syrup of Raspberries, Citron, or Lemons; to be taken every six Hours, drinking a Draught of Sack-Whey after it, or four or

five Spoonfuls of a moderate Cordial-Julep; or the Bolus may be this following.

Take of Diascordium, or of Sir *Walter Rawleigh's* Cordial, or Confection of Alkermes, half a Drachm; of Dragon's Blood, Powder of red Coral, each half a Scruple; Sal-Prunella, fifteen Grains; make it into a Bolus, with Syrup of Raspberries, or Lemons five or six Drops of Spirit of Vitriol, may be taken three or four Times a Day in small Beer, and in Water mixt with a fourth part of Claret, or *Florence* Wine; the Juice of Orange, or Lemons, is very proper and beneficial, taken frequently in the Patient's common Drink, and still at Night, an Ounce of Diacodium should be given during the Continuance of this Symptom. If the Physician finds the Strength and Spirit of the Patient much diminished, and his Pulse below Nature's Standard; he ought to prescribe warmer Cordial Juleps, or allow him now and then a little burnt Claret, or add to the astringent Boluses four or five Grains of Saffron, or half a Scruple of *Virginian* Snake-Root, or Contrayerva Stone; but if these are not required, the main Intention of preventing bloody Urine will be the better answered.

It often falls out, that a Looseness attends this Distemper, sometimes before, and sometimes after the Eruption; that which happens before is not of such dangerous Consequence; for after it is moderated, or remov

ed by Diacodium, or liquid Laudanum, it will disappear, when the Pustules arise; but that which happens after the Eruption is of greater Moment, and should be restrained by taking an Ounce of Diacodium at Night; and if that does not prevail, then the Patient may take three Spoonfuls of the following Mixture after each Stool.

Take of Mint-water and Barly Cinnamon-water each five Spoonfuls, Diacodium three Drachms, of Liquid Laudanum a Drachm, make it a Mixture; add of Plague-water an Ounce and half. And if bloody Stools should happen, the same Method is to be observed, which I laid down for the Removal of bloody Urine, only in this Case astringent Glysters should often be administred; such as this following.

Take of the Decoction of burnt Hartshorn, or Sheep's Head Broth half a Pint, add to it a Drachm of Venice Treacle, and as much Diacodium, and two or three Grains of crude Opium dissolved; or this,

Take of Flowers of Pomegranates and red Roses each a Pugil, of Pomegranate Bark and Oak-Bark each two Drachms, of the Root of Tormentil and Comfry each three Drachms; boil all in a Pint of Water to half a Pint, strain it, and add to it two Drachms of Diacodium and an Ounce of Diacodium.

The Pustules that appear on the second or third Day, do not ordinarily compleat their Eruption under three Days, and sometimes

not in less than four ; they appear at first in small red Spots, like Flea-Bites, yet a little rising above the Skin, by which they are distinguished from petechial or scarlat Marks, which accompany Malignant Fevers: Sometimes they come out distinct, and but little less in Size, than those of the mild kind, but afterwards when they grow bigger, and are joined daily with new Recruits, they run together and become the Confluent Sort. Sometimes the Pustules are so small, that scarcely any Space or Interval is discernible between them, but they imitate a general Inflammation of the Skin, with some Roughness and Inequality like a *St. Anthony's Fire*, all over the Neck, and Breast, and Face, as I have said before, and sometimes they appear at first in a middle State between those I have recited, that is, not so large as the first, nor so small and numerous as the last ; the first of these Sorts is dangerous, the second more so, but the last is incurable, and usually come forth on the first, or early, on the second Day.

In the first Stage, which ends at the Eruption of the red Spots, I have already declar'd my Judgment, that Evacuations only take Place, and that warm Cordials are not to be admitted ; and I have discoursed likewise on the extraordinary Symptoms, that sometimes happen in this Season of the Small-Pox, and have mentioned what are the most proper Means to have Recourse to in such Exigencies ;

Exigencies ; and now I proceed to the second Stage, which begins soon after the first Eruption, and ends at the Beginning of the Maturation. During all this Division of Time, while the Pustules are in their Growth, and every eight Hours make some discernible Advances towards Ripeness, the Patient is to be treated only with temperate Cordials, and cooling and diluting Remedies, if Nature goes on regularly in her own Work ; for the Physician, who is but her Servant, and whose Province it is to succour and assist her in Danger and Distress by endeavouring to reduce her to her right Way when she deviates from it, that is, by raising her Pulse, that best discovers her Condition, when they are too low and depressed, or by bringing them down when too high and vigorous, is obliged to stand almost neutral, and not by impertinent, and often hurtful Administrations to interrupt Nature's regular Operations, and incumber her with a foreign Weight of unreasonable or dubious Remedies, when she is scarce equal to her own Burthen : And this is often the Case when an unskilful and unapprehensive Physician, or a confident Nurse, who know not when Nature is in the right or in the wrong, and when she keeps her due Path or goes astray, and who not understanding the Connexion of the Means with the Ends, are always obtruding their Remedies upon the Patient, tho' they have not in View any particular
good

good Purpose, at which they aim; but in a general and mechanical Way they prescribe such Medicines as are in Fashion, and often given, tho' perhaps in different Circumstances, by the leading Gentlemen of the Profession.

But because it very frequently happens, that the active and governing Principles of the Blood are unable by their own native Strength to subdue this powerful Enemy, the Assistance of the Physician is demanded where his Skill and Abilities will be fully tried. It often happens that in this second Stage of the Disease, the Glands of the Throat called the Tonsils are much inflam'd and hinder the Deglutition or Swallowing of Food and Liquors for the Patient's Support, and sometimes to that Degree that they entirely stop the Passage of the Gullet, which will admit no Descent of Aliments to the Stomach; and sometimes this Suffering is protracted beyond two Days successive, and should this Symptom continue much longer it would evidently prove fatal: But I never saw any Person suffocated or starved by this Swelling and Inflammation of the Throat; for by the Assistance of softning, cooling and astringent Gargarisms and Injections of the same Kind by the Syringe, and in more difficult Cases by opening the Veins under the Tongue, or by the Course of Nature in such Inflammations, and the subsiding of the Swellings themselves, after such a Period of Time, the

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Symptoms have been always removed, and the Sufferer relieved. At the Beginning of this Stage the Eyes are frequently so far inflam'd, as appears by their red and fiery Aspect or Coruscation, that plentiful Drops of watry *Serum*, as so many impassionate Tears, flow down the Cheeks. This requires no particular Application, for it will disappear of it self, as the Distemper advances; only for the Ease of the Pain and Anguish, the distilled Water of Plantain, Roses or Elder Flowers, may be applied warm to the Eye-lids.

In this Season it often falls out, that the Patient is seized with an obstinate Wakefulness, a Suspension of Reason, and an ungovernable Frenzy; and as *Diascordium* and *Laudanum* are of great use in the Small-Pox, so here the Quantity usually given may be increased a third Part, or given twice a Day, Morning and Night: But it is injudicious to raise it to a much higher Degree; for during this Symptom it is often unavailing, which will take its Course in Despite of all Opiate Medicines. The most proper and successful Method is to ply the Patient with the cooling and diluting Medicines above-mentioned, and above all to take him out of Bed and set him in a Chair for a Quarter of an Hour, or a little more, and at his Return to Bed, to give him immediately a quieting Draught; this I have often seen happily attempted.

As for Blisters I cannot approve of them in this Case, and for this Reason, that that Remedy will quicken and stimulate the Blood and Animal Spirits, expand their Structure, and accelerate their Motion; and therefore in a Lethargick Paralytick or Apoplectick State, and in other Distempers where the Blood is sluggish, and the Spirits are loaded with a Collection of crude Humours, they are very beneficial, and the Reason is manifest: But in the Case before us the Spirits are already too much expanded, even to Fury; and therefore cannot be relieved by Remedies, that will stretch them farther, and spur them on the swifter Motion: They do not now want a Spur to quicken, but a Bridle to restrain them; not Medicines to widen and enlarge, but to reduce and contract them; and I have seen the Event answer this Reasoning; for when Blisters have been applied in obstinate Wakefulness, when the Heat of the Blood was excessive, and the Pulse swift, they have not produced a Minute's Sleep; on the contrary, the next Day the Wakefulness was improv'd to a downright Delirium, approaching to a Frenzy: This, I say, I have observed in inflammatory and likewise in malignant Fevers, when attended with a great Abundance of military Eruptions.

In this State short and difficult Breathing many Times afflicts the Patient, as well as at the latter End of the Distemper, and always presages

prefages great Danger. As Pectoral Medicines ought to be given in this Case, and such Cordials as fainting Nature demands for her Service, to enable the Spirits to go thro' their Labour, and perform their Duty in contracting and dilating the Breast for keeping up the vital Flame; so this Symptom is often happily relieved by a gentle Vomit, which may some Days after be repeated, if the same Circumstances require it; and so if the Face lyes flat and does not begin to swell the ninth Day, according to the usual Manner, the like Vomit administred will much contribute to its Extension and Elevation. But I do not look upon it as reasonable, to administer a Vomit either before such short Breathing happens, merely for preventing what may never come to pass, nor to promote the swelling of the Face, till it be seen that Nature is defective in its Duty, and being unable to perform her Task requires the Help of Medicines. It will be Time enough for the Physician to advance with his Auxiliary Remedies when Nature is actually wanting to her self, and is pushed too hard by the Enemy, and not to fall on rashly before she has given the Word and demands Assistance. The Vomit to be given in either of the forementioned Cases may consist of the vomitive foreign Root and Oxymel of Squills, the Form of which, and the Manner of taking it, has been set down in the Page before.

At the Beginning of this Stage a sore Throat and a rough Hoarseness often afflict the Patient; the last of which by shewing the Dryness and Contraction of the Strainers, and thereby their Incapacity of doing their Duty, is a dangerous Symptom, and is to be treated with soft Gargarisms, Pectoral Decoctions, Mucilages and plentiful drinking of Emulsions, or other soft convenient Liquors to temper the Blood and dilute the *Serum*, that it may become thin, and apt to pass the Glands with Freedom.

Sometimes in this Season an irritating vexatious Cough persecutes the Patient, and for the suppressing of it nothing is more effectual than Diacodium by it self, or mixed with Oil of sweet Almonds as in the Form following.

Take of new Oil of sweet Almonds and Diacodium, each two Ounces, of Liquid Laudanum twenty Drops, of Saffron twelve Grains, and with a small Quantity of fine Sugar mix it into a Linctus, and let the Patient take a Spoonful frequently, if the Cough require it. At this Time Emulsions, and the common pectoral Decoction should be freely given, if no Apprehensions of a Looseness forbid it.

Sometimes a Looseness falls out in this Season; for, when after Nature has exerted all her Force to concoct and drive out all the putred Principles of the Disease, and notwithstanding has been unable to accomplish
her

her Design, but still Part of the malignant Matter is unsubdued and remains in the Blood, she strives to free her self of these putred Remains by expelling them by the Glands of the Guts, whence arises the Looseness, for which the Method of Cure has been set down before; for when she cannot by her utmost Efforts exclude all the poisonous Matter to the Surface of the Body, she labours to effect it by other Strainers, not only those of the Guts, but likewise those of the Mouth and Kidneys; and this leads me to the important Symptom that arises at the latter End of the Space of Time between the Eruption and Maturation, that is, a copious Spitting or Salivation, which I have before mentioned, when I enumerated the Symptoms of this Distemper. After the governing and operative Principles of the Blood have determined to the Skin the greatest Part of the Matter of this Disease, a considerable Portion is left behind, which mingling with the *Serum*, or watry Part of the Blood, is thrown off by Nature to relieve her Oppression into the Salival Glands, and other Strainers of the Mouth. By this Nature is relieved almost as much as by the Expulsion of the noxious Matter to the Skin, provided the Salivation be thin and copious, and continue several Days. But if the Juices separated by these Strainers are thick at first, and excluded with Labour and Difficulty, and especially if attended with a Hoarsness of the

Throat; then a Prognostick may be given, that it is like to go ill with the Patient, and that his Life is in great Danger: For as when that Portion of the malignant Materials designed by Nature to be lodged in the Face and Superficies of the Body, are either not wholly thrown out, or if cast out, do not attain a due Maturity, the Patient is in great Hazard from that Part that remains unexpelled; so when the other Part of the noxious or putred Materials, which by Nature's Intention, but imperfect Effort, by Reason of the Narrowness and Driness of the Strainers, are not sufficiently discharged by the Mouth, the malignant Remains in the Blood will, with the utmost Difficulty, any other Way be exterminated, but will grow thicker and more viscous, and stick fast in the Glands, till the Patient is almost suffocated and strangled; and that which continues unexcluded will, by increasing the Fever, oppress the Spirits, and often prove fatal. To assist Nature in this Distress, by keeping the Juices thin, and so preventing their viscous and clammy Quality, that they may with more Ease pass the Salival Glands, plentiful Dilution by all proper Liquors is very necessary. Gargarisms and soft Decoctions frequently injected by the Syringe into the Mouth, that may affect the Throat and free the Strainers from the thick Humours adhering to them, are very profitable; and if short laborious Breathing likewise accompany this Symptom,

then

then the Vomit before-mentioned will be demanded; and at the same Time, to succour and support the Spirits in their Labour, more generous Cordials should be used, that the crude Matter in the Blood may be digested, and the Growth of the Putrefaction resisted.

From the Beginning of the Maturation, to the Conclusion of this great Distemper, commences the third Stage of its Progress. The swelling of the Face proceeding from the inflammatory State of the Pustules, near the Time of their Separation, as I have before described at large, begins most commonly on the ninth Day from its Invasion; but if it appears before, as it sometimes does, it is a discouraging Sight, for then it is evident, that Nature is oppressed by the great Corruption of the Blood, and to deliver herself from her Enemy, proceeds too hastily in her Operations, and would come to a State of Maturation by untimely Advances, as the Case is when unable at the Beginning of the Disease to endure the Fury of the putred Matter, she excludes it on the first or second Day, while it is yet crude and undigested; which unseasonable Effort is attended with the greatest Danger. If the swelling of the Face does not appear at its proper Time, the Vomit before described is very proper to bring it on, and at this Time more active and cordial Medicines are to be administered, and the cooling and astringent ought to bear a less Proportion,

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portion, because Nature now much spent and weakened by her long Labour and Conflict, requires Relief and Assistance from more generous Remedies, to enable her to digest the crude Pustules, and sustain the hard Task of Suppuration. The Cordials then may be such as follow.

Take of Sir *Walter Rawleigh's* Confection, half a Drachm, of Saffron, Cochineal and Volatile Salt of Hartshorn, each five Grains; make it into a Bolus with Syrup of Raspberries, to be taken once in six Hours, drinking after it four or five Spoonfuls of the following Julap.

Take of Milk-Water and Black Cherry-Water, each five Ounces, of Treacle-Water and Plague-Water, each an Ounce and an half, of Syrup of Lemons an Ounce and an half; make it into a Julap. Or this;

Take of *Diascordium* half a Drachm, of Saffron four Grains, of Powder of the Flesh of Vipers half a Scruple, of *Virginian* Snake-root six Grains, of *Sal Prunellæ* half a Scruple; make it into a Bolus with the Syrup of Raspberries or Lemons, to be taken as the other.

In the mean Time the cooling and astringent Medicines ought to be interposed for the Reasons above given; such as Juice of Lemons, the Spirit of Vitriol, and plentiful Dilution, which is a great Article in this Distemper, as it is in all inflammatory Fevers, ought to be encouraged. If the Face swells

gradually to a good Height, if the Confluent Pustules appear for the greatest part round, and fill themselves by Degrees with white thick Matter; it is highly probable, that on the eleventh Day, or the next following, Nature will triumph over her Adversary, and that the Patient will be then in a State of Safety.

It is on the eleventh Day, when the swelling of the Face begins regularly to diminish and subside, that the Hands begin to rise, where the Course of Suppuration is more backward, because the Eruptions there came forth after those of the Face: But the Decrease of the swelling of the Face is not, in my Judgment, in any wise the Cause of that in the Hands, as I have before demonstrated: But if the Face sinks before the eleventh Day, Nature is forced by the great Putrefaction to take irregular Steps, which presages Danger to the Patient; for the longer his Face continues swelled, the safer his Condition is: Though before the eleventh Day, the Heads of several of the Pustules should not be round, but pitted or dented in; yet if the Sides fill themselves with digested Matter, it will suffice for the Purpose of Nature, and the Patient may escape; and often those depressed Heads will rise again: But if they are not only dented in, but are likewise black and dark, and that in a considerable Number; it discovers great Malignancy and Corruption, and is likely to be fatal. If a great part of the
Pustules

Pustules rise, and are enlarged only by means of a thin limpid Water contained in them, and so appear like small Blisters; it is an Argument that the putrid Parts contained in them are crude, and not digested into laudable Matter, whence a fatal, or at least a doubtful Issue, may evidently be collected; and in both these Cases, *alexipharmick* Remedies, that promote Concoction, by animating and confirming the active parts of the Blood, are chiefly to be insisted on; such as I have before laid down, and which may be increased in their Quantity, in such Difficulties; and at the same Time, Cordials joined with moderate, acid and cooling Roots, in Decoctions, may be used, and drank warm, after each Bolus, to the Quantity of a quarter of a Pint: As this for Instance;

Take of Root of Scorzonera two Ounces, of Root of Butter-bur an Ounce, Eringo-Root candied six Drachms, of Root of Dandelion, Asparagus, sweet Fennel, and Couch-Grass, each half an Ounce; of Seeds of Rhue and sweet Fennel, each a Drachm; boyl all in a sufficient Quantity of spring Water to a Quart; add to it, when strained, of Treacle-Water two Ounces, of Plague Water an Ounce and half, of the Syrup of the five opening Roots three Ounces. In this Decoction are united warm and Cordial Ingredients, with attempering and cooling ones, to answer the two great Intentions, at first laid down; that is, the binding up, and confirming

confirming the Parts of the Blood, and securing their Connexion and Coherence, to prevent the Progress of the Putrefaction and at the same Time to invigorate and empower the sound and active Parts to subdue, concoct, and expel those that are already putrefied: and therefore such Decoctions may be very useful through all the Stages of this Distemper.

Sometimes in this Season of the Disease a copious Separation of the Serum by the Strainers of the Kidneys proves very advantageous to the Patient; for a plentiful, pale, and almost limpid Urine, carries off in its Current, a considerable Quantity of the noxious Matter, with which it was charged; for this is another Effort of Nature, to throw off by the Glands of the Kidneys, the residue of the putrid Materials, which she was not able to exclude by the Glands of the Skin, or those of the Mouth, and she often attempts this last Shift with Success. To promote this Separation the Decoction above prescribed and generous and enlivening Medicines blended together are most proper and beneficial. I know that some eminent Physicians have recommended in this Case Pulvis Bufonum calcinated; but I must acknowledge, that upon Tryal, I never knew it produced any considerable Effect, and therefore it is not to be relied on. About the tenth Day at Night, when Nature will be most alarmed, the Guards ought to be doubled, and an Ounce of Diacodium is to be given in the Evening,

and early the next Morning; and so on the eleventh Night, if the Fever and Inquietude require it. On the ninth, tenth, or eleventh Day, if the Fever is high, and the Heat scarce sufferable, a Clyster of Milk and Sugar, should be administred; as it ought to be every other Day from the Eruption, to suppress the Fury of the inflammatory Parts, and prevent the Fever from getting too great a Head; and by that Means, the critical Province on the eleventh Day is best provided for, and the Physician in his Medicines and Method, from the first, is always to have an Eye to the decisive Time, called the Turning of the Small-Pox, that he may preserve the Blood in that Disposition, which will most favour the determining Struggle.

As to Blisters, though before I would not allow the Application of them, for the Reasons there given, yet about this Season, they may in my Opinion be used with Advantage; not as they cause Evacuation, for that is inconsiderable; but as they stimulate the Blood, and agitate the Spirits, and by that Means quicken and assist them in the Labour of Digestion; and so they operate as proper Cordials, doing the same Office by external Application, which others perform, when given inwardly. But it often happens, that the Case is not judged and determined on the eleventh Day at Night; it is frequently as said before, protracted longer to the thirteenth, fifteenth, seventeenth, one and twentieth Day, and sometimes, tho
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seldome, much farther: And while the Decision is thus suspended, all that the Physician has to do, is to order Clysters to be often injected; to apply Vesicatories, so as to keep two always at work, to continue each Night the quieting Draughts, to support Nature by generous and operative Succours and wait her Steps for a favourable Issue.

If it be demanded, whether in such Cases, purging Medicines ought to be administred to carry off the Putrefaction, and so bring the Contest to a happy Conclusion; I answer, I can by no means approve of that Practice: I have formerly made Tryal of it, but I must acknowledge, I never once saw any good Event. The purging Remedies, instead of carrying off the putrid Humours, diminish the Patient's Strength; and Nature before almost exhausted, being more enfeebled by this unseasonable Evacuation, always sunk beneath her Burthen; and I have known that other Physicians have had no better Success, and it would be wonderful if they should; for while the malignant Matter is crude and indigested, no evacuating Medicine can disengage and free the Blood from it. It may waste the Spirits by putting them upon insuperable Tasks, and weaken the Patient by expelling the wholesome, instead of noxious Humours, but cannot separate from the Mass the poisonous matter, till it is disposed and prepared by Digestion, for such a Separation, according to the established Maxim, *cocta non cruda*

sunt Medicanda. Besides, if purging Medicines were availing at this Time, and could carry off the unconcocted Parts, they might have done it as well at any Season of the Distemper from the very Beginning; for then the only Obstruction to their Success, was the crude and undigested State of the malignant Matter of the Pustules: And should it be said, that at the latter End, the Putrefaction is not so great as before, much of it having been spent during the Maturation, though defective: I answer, that if it be allowed that the putrid Parts are much fewer than before, it must be allowed too, that Nature is much weaker, and that the Spirits are much wasted and destroyed in the long and sharp Conflict, and therefore the Case will still be equal. Besides, though the Number of the malignant Particles is not so great as at first, yet let them be of what Number the Objector pleases, they are crude and unconcocted, and therefore incapable of Expulsion; for it is not their greater or less Number, that makes them more or less fit for Exclusion, but their Incapacity consists in their being undigested: and therefore to give purging Medicines to carry off Humours from the Blood, which are not prepared and disposed for Separation, is in my Opinion an unreasonable Practice. It is in vain to bring a few strained Observations, and drest Narratives, to establish any Practice, that opposes common Sense, and the Experience of skilful

ful Physicians by any Examples or Histories produced to favour a novel Doctrine, and serve an Hypothesis. If Physicians would have Patience and wait on Nature's Steps, and not run before and precipitate her Operations and disturb her Intentions, I am very confident they would see more recover this Way, than they pretend are restored by purging Medicines. Nature her self often works out her own Deliverance when guided and led, and not driven: She will turn, and wind, and shift in many surprising Ways to save Life, and escape the Enemy. At first she strives to free her self from the putrid Matter of the Disease, by excluding and lodging it in the Skin; and when this does not prove a sufficient Separation, but still many corrupt or mortified Parts remain in the Blood, to supply the Defect of the first Expulsion, she opens the Sluices of the Mouth, and lets through a Torrent of Serum by Salivation; but if this Attempt is not so successful as to expel the whole Putrefaction, she has recourse to the Strainers of the Kidneys, and by them excludes the putrid Remains in plenty of Urine; and even after this, sometimes her work is still unfinished, and the Blood is not entirely depurated, but remains in part impure and unrefined; and then Nature is put to hard and uncommon Shifts to extricate her self from her Difficulties, by excluding the poisonous Particles not yet separated from the Blood by all her former Endeavours

deavours and this she does sometimes by raising a *St. Anthony's Fire* to consume and purge them off; sometimes by as friendly Stools, and sometimes, though then the Danger is over, by Boils in several parts of the Body; and thus by sundry Hazards, unwearied Labour, and a Series of various Evacuations Nature at length becomes secure, and triumphs over her vanquished Adversary.

The Struggle is indeed sometimes long protracted by the Continuance of the Fever, even in a dangerous Degree, after the Pustules of the Face are turned to a brown Scab, or one dry, hard and unequal Crust; and if we enquire into the Cause, that feeds and supports this Fever, some affirm that the Continuance of it is owing to the crude Matter that lies under the crusty Superficies of the Face, and some undigested Patches dispersed in the Limbs, or Trunk of the Body, which constantly supply the Blood with new Putrefaction; but notwithstanding these Pustules not perfectly ripe may perhaps communicate from without some noxious Fuel to the inward Flame, yet let it be considered that the Pustules, though some of them are not fully mature, are however long before so far cast out of the animal Regimen, that their Communication with the Blood seems entirely cut off, as that of a dry Scab, and therefore will cause no Fever.

I have known that purulent Matter has lain
twenty

twenty Days and more under the hard Pustules, which has been prest from them in great Plenty by the Patient's Finger, without producing the least Fever; and therefore, I believe, that the Fever, which continues so long after the Face is dry, and in a great Measure cleared, is derived from the poisonous Parts in the Blood, not yet concocted and subdued, and so not prepared for Separation; and I am the more confirmed in this Opinion, when I reflect on this, which I have often observed; that a bad Fever has remained, even after the Face, and Body, have been sometimes almost, and sometimes wholly cleared of the ripened Pustules.

What I have said against purging in the third and last Stage of the Small-Pox, may be urged against Evacuation by bleeding, with the like Evidence of Reason and Experience: As for Experience, I must testify, I never knew that Method succeed: I have formerly heard of one or two that recovered, notwithstanding they were let Blood at the End of the second Stage; but I cannot say, that Operation did contribute to it; and how the Diminution of the Blood, and thereby of the Strength and Activity of the Spirits, should be availing in this Case, is, I must acknowledge, too difficult for me to conceive. If it be said, the Blood is in a great Flame, and the excessive Heat is ready to stifle and overset the Patient; to reduce that Heat, recourse may be had to Clysters, to the taking of the
Patient

Patient out of Bed, and diluting Liquors; and the active and cordial Medicines may now be given in greater Proportion to enable Nature to digest the putrid Parts, with which she is still oppress'd; and this will be the best Means to reduce the inordinate Heat, as the painful Inflammation of a Boil is abated, and the Fire extinguished, when the Matter is fully ripened.

I have now expressed my Sentiments on the Nature of this great Disease, divided it into its several Kinds, or Species, and laid down the Method of its Cure: As I have often tried this Method when alone, through the Series of many Years, and have found it successful above any other Way; so in Conjunction with other Physicians, chiefly with Sir *J. Shadwell*, his Majesty's first Physician, a Gentleman of extensive Knowledge and Skill in his Profession, and particularly an able and judicious Practitioner in the Small-Pox, it has been persued with great, and sometimes very surprizing Success; while Numbers, who seem'd to be in deplorable Circumstances, and sinking under the most threatenng Symptoms, have been wonderfully relieved, and rescued from the very Jaws of Death.





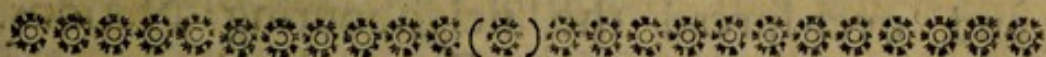
PART II.

A

DISSERTATION

Upon the

Modern Practice of INOCULATION.



The INTRODUCTION.



It has been long observed of the Natives of *South Britain*, that from an inbred Curiosity, they are passionate Lovers of Novelty, and ready to embrace Notions out of the common Way of Thinking, and Practices contrary to the Customs of their Country. This evidently appears in their
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proneness to entertain new Doctrines in Religion; for there can hardly be broached any Schemes, or Speculations, though ever so wild and extravagant, but there will be found Numbers of Persons of an odd and whimsical turn of Mind, ready to espouse and defend them; whence arises that wonderful Variety of enthusiastical Sects, with which this Nation has so much abounded, and still abounds; who are distinguished from sober and well-instructed Christians, and from one another by their several specifick and peculiar Deviations from Truth and common Sense. Nor are the Professors and Practicers of Physick less divided in their Systems and Opinions; for besides the Differences among the regular Physicians, Men of good Sense, and a liberal Education, a great Diversity of Quacks, fanatical Chymists, and confident Pretenders to this Art, swarm in this populous Kingdom, and over-spread the neighbouring Nations. Nor do these various Denominations want their Admirers, and zealous Followers; nor are the illiterate Vulgar only apt to crowd about these Empericks, but I know not how it comes to pass, Persons of the highest Rank do often cry them up, trust their Healths and Lives in their Hands, and are frequently the first spreaders of their Fame, promoters of their Interest, and protectors of their Reputation: And therefore I do not wonder, if the celebrated Mountebank *Pontæus* should say, as I have observed in another Writing, that
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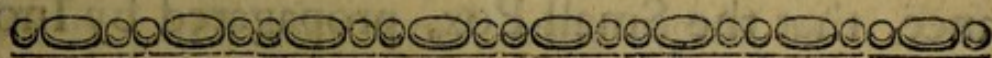
of all the Nations in *Europe*, where he had practised his Art, he found *England* the most disposed to favour and encourage Men of his Character. And though the Individuals of the several Species of Empericks, and ignorant Pretenders to the Cure of the Gout, Stone, and other great Distempers, whether Natives, or Foreigners, have only blaz'd a while like empty Meteors, and as soon disappeared, and sunk into their former Obscurity, which holds good even from the Quacks favoured by King *Charles* the second, down to the Syringer, and the late Coal-Heaver; notwithstanding, I say, the People soon found out the Delusion of these Impostors successively, yet this credulous and good-natured Nation, are still ready to hearken to any bold Fellow, that shall confidently assert his never-failing Abilities, and roundly assure them, that his Powder is infallible.

I was not therefore surpris'd, that when the novel Practice of Inoculation of the Small-Pox was first introduced into this Kingdom, it should meet with many Friends and Patrons; though I acknowledge, that considering the Advantage it had of being so great a Novelty, and brought from such a Distance, as *Constantinople*, it is surpris'ing, that it did not make a quicker Progress, and meet with a more ready Reception; for notwithstanding the People catch at any Thing entirely new with such greediness, yet to the Generality, it at first appeared so bold an Undertaking, and so shock-

ing to Nature, that they expressed an Aversion to it. Multitudes looked upon the Practice as inconsistent with the Christian Religion, that forbids its Followers to tempt Providence, and run into unwarrantable Hazards; and many more thought it a prudent and discreet Part to stand by as Spectators and Observers, to see if this Method could be justified, and settled by a sufficient Number of successful Tryals, before they would make the Experiment in their own Families, and venture upon such a nice and unknown Method, till they had received this just Satisfaction. For my own Part, when I was asked by my Friends, and Patients, what my Opinion was of this new Practice; my constant Reply was, that I looked upon my self obliged to wait, and see if this Method would be established by good Experience, and to learn whether the Promises of the Inoculators would be made good by an answerable Event; that I could not build a general Affirmation upon a few Instances, and that therefore a considerable Time must be allowed, to make Observations on the Matters of Fact, before I could form any settled Judgment upon this new Way. Nor do I think that the Number of Experiments already made are enough to establish a Conclusion on either side of the Question. For besides the unfair Shifts, and evasive Arts, that have been used with great Care and Industry, to cover Miscarriages in this Operation, and conceal the true Matter of Fact, which

which makes the History of the Events uncertain; there has not yet been Time enough spent to decide the Controversy by sufficient Tryals, considering that several of them make against the Inoculators.

But however, not knowing how long we must wait for this Satisfaction, I am willing in the mean Time to publish my Sentiments upon this litigated Subject.



An INQUIRY, whether those Persons, who first introduced into this Kingdom the foreign and novel Practice of Inoculating the SMALL-POX, have made good what they promised and pretended to effect by this Operation.

THE Undertakers, that imported from *Turkey* this extraordinary Invention, and intended by it the Service of their native Country, as it is charitable to believe, told the People first, that this Operation would produce the Small-Pox in the Persons that never had them before.

In the second Place, that if it did not bring forth the true Small-Pox in its proper Forms, but Flushings and a Rash of a different Size and Figure, yet these spurious Eruptions, together

together with a copious *Serum*, or thin Matter, that issues from the Wound, would so entirely eradicate and carry off the Seeds and Principles of the Small-Pox contained in the Blood, that the Person should never, during his Life, afterwards be attacked or seized by this Distemper, but that this irregular Discharge would be as effectual to all Intent and Purposes as the true and genuine. And

Thirdly, they gave out with great Assurance, that the Small-Pox, propagated by Inoculation, should always be of the mild and distinct Kind, and that therefore all their Patients should recover.

As to the first Article, I am very credibly informed, that sometimes this Operation neither produces the Small-Pox, nor any Thing else, but the Undertaker leaves the Patient as he found him.

As to their second Promise, that in Case the Inoculation does not bring forth the Small-Pox, but Eruptions very different, yet this Discharge shall certainly prevent their falling into that Disease for ever after; this Assertion is not founded upon just Observation and Experience. On the contrary, two Things are alledged against it; one is, that notwithstanding this ingenuine and pretended Small-Pox, altogether unlike the true, has been undergone, yet the genuine and regular Sort has broke out upon such inoculated Persons several Months after the Operation; which is a full Demonstration that the Seeds of
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that Disease are not always carried off with those Impurities, which were discharged by the Inoculation. And the second Thing alledged is, that this Operation performed on Persons, who have already had the Small-Pox, will bring forth the same Eruptions, and be accompanied with the same Gleet discharged from the Wound, which happens to those who never had that Distemper before, and now only an imperfect Imitation of it; whence one may reasonably argue, that these false Eruptions may be wholly unmixt and unconcerned with the Principles of the Small-Pox, since they alike follow upon Inoculation, whether the Person has ever had or had not that Distemper before. And since this can only be made appear by Instances or Examples, I shall take that Method of proving the Assertion. To prove the first I shall relate the following History.

A Girl of twelve Years old, well grown, and of a swarthy Complexion, after her being inoculated had a pretty large Flushing, or Efflorescence, spread over her Skin, and was disorder'd by feverish Heat; the tenth or eleventh Day three or four Pimples, or Pustules, broke forth upon the Head, and there was a large Discharge of Matter from the Wound: This *Maitland*, the Inoculator, affirmed would as effectually secure her from the Small-Pox for the future, as if she had had them in a fair genuine Way. A while after, the Gentleman, to whom the Opera-

tor gave this Assurance, hearing that the Girl had undergone the true Small-Pox, from just Curiosity of being rightly informed, applied himself to her Father, one *Degrave*, Surgeon in *Berwick-Street*, who consented that his Name should be made use of on this Occasion. The Girl was at this Time in the Country. The Account which the Father gave of the Matter, is as follows. Before she came home she had a Sort of Itch, which, as he said, he cured. Three Weeks after the Inoculation she had a large Boil upon her Ham, another upon her Side, which ran plentifully for a Fortnight or three Weeks. She had been purged twice before the first Boil appeared. The Suffusions, or Flushing that discoloured the Skin, remained as at first sometimes more, sometimes less, for the Space of twelve Days after the Inoculation. She had a *Nausea*, loss of Appetite, was weak, listless, giddy, and had terrible Frights in her Sleep, and so continued till about twelve Weeks after the Operation: Then she was seized with a Pain in her Back, tho' not so violent as to confine her, and three Days after the Small-Pox came out: Her Hands and Arms were full, a pretty many appeared upon her Legs, but she had few on her Body, and only two on her Face, and they were all fully ripened the seventh Day after the Eruption. Now by this History it is evident, that the false Eruptions and Flushing, with the Help of the issuing Matter from the Wound did not bring forth

forth the Stamina, or Principles of the Small-Pox from the Blood; for not till after those Symptoms disappeared, even twelve Weeks, did the Distemper break out in a true and regular Manner. If any Man shall adventure to say, that this was all along the Small-Pox stirred up in the Blood, though it did not appear till three Months after, this will not favour the Inoculator's Cause; for first it must be allowed, that the Gleet and the Eruptions were not concerned nor complicated with the Seeds of the Small-Pox, nor were they the Conveyancers that brought them out. This Point being settled, it will follow, that all these irregular and false Symptoms to which is attributed such a healing Virtue, may all appear without the least Matter of the Small-Pox in their Company, which will be left to be excluded with another Set of Eruptions and other Symptoms proper to the true Distemper. Who then is unconvinced, that the inoculated Matter sent into the Veins to search after, seize and bring forth the Seeds of this Disease inhabiting in the Blood, may come back, *re infectâ*, and without doing the least Part of its Errand, while it only causes a Gleet and Disorder by Suffusions and Appearances on the Face and Body; and that the Task of Separating from the Blood the true Seeds, may evidently be reserv'd for the genuine Symptoms, which will afterwards be employed for that Purpose?

Besides, it should be considered, that sup-

posing the inoculated Matter did only awaken and stir up the Seeds of the Small-Pox contained in the Blood, but could not bring them out by the false Symptoms before-mentioned, but left them to be digested by a long Course of Time, and after three Months to be expelled with the true Eruptions, how great a Danger of his Life the Patient must run all this Time, while he feels the Struggles and Strife of Nature to concoct the Matter, and bring it to a perfect Disease! for not knowing his Condition and the Reason of his various Complaints, and having receiv'd Assurance before from the Operator, that by the Appearances and Discharges, which happened soon after the Inoculation, he was fully secured from ever having the Small-Pox, either out of Negligence and want of due Care of himself, or by taking improper or prejudicial Medicines, not dreaming that he is breeding the Small-Pox, he may fall into the greatest Hazard. Hence it is plain, that sometimes all the Effects of Inoculation are insignificant, and leave behind them the Materials, or Rudiments of the Small-Pox in the Blood; how then can we be assured, that the false Eruptions have at any Time brought forth with them the Principles of that Disease; for in the Instance now before us, they certainly brought out none? It is therefore not only possible, but probable, that the Matter called forth into the Skin in those Suffusions, or Flushings, which are by no Means the
true

the true Small-Pox, may be intirely free from all Mixture and Combination with the proper Seeds of that Disease; and therefore the sanguine Undertakers can give no Security, that the Patient shall not be seized with the genuine and real Distemper in Time to come.

It is by this History very evident, that the anomalous and irregular Suffusions on the Skin, and the copious Gleet from the Place where the purulent Matter was inserted, may happen, and yet leave the Seeds and Principles of the Small-Pox untouched. And since one Person, and it is likely many more, who are not come to my Knowledge; (for great Care and disingenuous Diligence has been used to stifle such Examples; but not surely from a Zeal to promote true and useful History,) have, notwithstanding such disorderly Evacuations, afterwards gone thro' that Disease in all its regular Forms; what Assurance can we have that those shall not be infected with the true Small-Pox hereafter, who can produce no other Evidence of their having had this Distemper already, but this, that after Inoculation a Rash, or Flushings, accompanied with Matter issuing from the Wound, were dispersed and diffused over the Skin, which are no more the true Small-Pox, than the Itch is to? The Operator however assured them, that this Discharge would do as well, and serve for the Small-Pox instead of a better: But may not such a Person many Years after be infected with the genuine and uncontested Kind,

that may prove fatal? The Numbers therefore, that have escaped the Small-Pox by Inoculation, cannot be computed, and the Balance settled, till hereafter it shall appear how many of those, who had only such spurious Symptoms, as before-mentioned, shall suffer the right and undisputed Sort in Time to come; for it appears by this Example, that the inoculated Person is not infallibly protected against all future Contagion of this Nature, since those Suffusions and irregular Breakings-out upon the Skin, attended with issuing Matter, which the Inoculators substitute as an Equivalent, or Succedaneum in the Room of the true Distemper, not only proved ineffectual and insignificant, but hurtful and dangerous.

The Instance I shall bring to make good the second Assertion is what Mr. *Tanner*, an experienced and judicious Surgeon, belonging to St. *Thomas's* Hospital, communicated to me. He affirmed, that to discover the Truth in this Matter, the following Experiment was performed in their House. A Person, who, as it was very evident, had undergone the Small-Pox before, was inoculated in due Form, and the Effect of the Operation was a Discharge from the Orifice of the Wound, and the irregular and anomalous Eruptions before described, that is, such as appear when the genuine Distemper is not produced; whence it is plain, that such Appearances may happen upon Inoculation, which bring forth with them

no Seeds of the Small-Pox, and then they cannot always deliver the Patient from being afterwards infected with the true Kind.

As to the Production of the mild Kind only, and the Certainty of Recovery in all Instances, where this Operation is performed, that Point, it is certain, must be given up; for notwithstanding the Undertakers positively affirm, that by this Practice the Confluent or Dangerous Sort is never propagated, it is past all Contradiction that sometimes the Event has been otherwise, and Examples of this are so well known, that I forbear to set them down.

It is in vain to give this Matter another more favourable Turn for the Operators, by saying, the Patient was of a weakly Constitution, and full of ill Humours, or that he was of a froward and perverse Temper, and died by a Fit of Peevishness, or that he was carried off by terrible Convulsions, and not by the Small-Pox; for Men of the least Sagacity must see thro' these ridiculous Evasions invented to cover true History and defeat our Inquiry into Matter of Fact, and to buttress up the Reputation of the Inoculators. Let it be supposed, that the Person is of a weakly Constitution, and that he labours too under some other Diseases or Indispositions, why would the Operator undertake to procure in such a Person this Distemper? why would he not chuse to set him by, and tell his Relations that by Reason of his unhealthful
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Complexion it was a dangerous Thing to meddle with him? But what if after all, this be no more than a mere Pretence and Subterfuge never thought on or spoken of till after the unhappy Event? And to say that the Patient had indeed the Small-Pox, but died of Convulsions, is only a Contrivance of the same Nature, to save the Credit of the Undertaker; it might as well be alledged, that he died by loss of Strength and vital Heat, or for want of Breath, of which great Numbers miscarry in all Diseases; for is there any Thing more common, than for mortal Distempers after the Spirits are exhausted to end in Convulsions? And since those Convulsions are the Effect of the Distemper, that has ruin'd the Patient's Vigour and laid all Nature waste; must not the Distemper be charged with the fatal Event? To say that the Small-Pox, which the Convulsions attended, was not the Cause of the Patient's Death, but the Convulsions, is the same Thing as to affirm that the Axe that cuts off a Traytor's Head, is by no means the Cause of his Death, but the Effusion of Blood and trembling Motions of the Body, that followed the Separation.

To sum up what has been said concerning the Inoculator's Performance of his Promises; it is very evident that he is guilty of the Breach of his Word and Honour, which he plighted in the most solemn Manner, and with consummate Assurance: For if he does not always bring forth the Small-Pox,

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but sometimes fails, even of producing any Thing, but his own Shame: If when he brings forth upon the Skin any Pimples, Flushings, or Tetter-like Patches, which often happens, but are not the Small-Pox, nor will prove a Preservative against the Invasion of that Distemper afterwards; if he does not always by his inoculated Charm call up a mild, Distinct Kind, but sometimes a frightful Confluent Sort, contrary to his Intention, will appear; if the inoculated Persons do not always recover, but several of them fall by and under the Operation, then it is plain that the Undertakers have not made good any one of their Promises. And I must acknowledge that I was at first prejudiced against them, by their boastful and Quack-like Conduct, while they roundly and with intrepid Confidence affirmed, that their unerring Method would always propagate a safe and Distinct Kind, not guarding themselves by any saving Exceptions, or Limitations; this, I say, was such an arrogant and emperical Manner, that it made me suspect the Operators were either ignorant or unfaithful.

What has hitherto been said, was to demonstrate the Risk the Persons themselves run, who submit to this Operation: But the following Remark will shew the Injury, that it is always probable, and sometimes certain, they will bring upon others. It is well known that several Diseases are propagated from one Person to another, and from one House to another,

other, and therefore are named Infectious; for in those Cases the corrupt Particles, or noxious Effluvia flowing from the Body of the sick Person, being conveyed by the Mediation of the Air, will be communicated to others, and inspire into their Blood the Contagion, and this is the Nature of the Small-Pox: And therefore when any Person out of Choice brings into his House or elsewhere this Distemper, it is highly probable, if not certain, that he will propagate the Infection among the nearest Inhabitants, who will convey it to others, and so on, till the Distemper rages thro' the whole Village, or City, which, I am informed, has befallen the unhappy Sufferers in the Town of *Hertford*; and this Event is inevitable from the infectious Quality of the Disease: And notwithstanding the Inoculators should produce in their Patients only the Mild and Distinct, yet the Neighbours that shall be infected by it, may suffer the Confluent and most fatal Kind; for it is common to observe that in the same Family, where are many Children, if the first that falls sick, has a very mild Sort, the second that is infected by this mild Sort, shall have a Confluent and dangerous Kind, the third again a gentle and safe Sort, and the fourth, one not only Confluent, but Mortal: So that I cannot see but those who submit themselves or their Relations to this Operation, are guilty of great Injustice and Wrong to many, whose Lives by their Means are put in Danger. And tho'

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Persons of Quality and Distinction may provide Places remote from others for their Children, and therefore may be in a great Measure excused; yet still there may be some Danger, though not so great, that the Distemper may be communicated by the Conveyance of the Air, or by infectious Goods and Garments; but if this Practice be encouraged and grows common, this Provision cannot be made by the generality of the People. Our Governours formerly thought fit to make a Law, that obliged the Person in whose House a Fire should break out, though by Accident and without his Contrivance, to make good the Damages of his Neighbours, whose Dwellings should be burnt down by the spreading Flames: It is true, that Act is since repealed, but when it was made, there was a great Appearance of Reason and Equity in it, otherwise it had not been enacted. But how much more to be condemned are such, who design and contribute their Endeavours to bring about such a Mischief; and therefore there is a Statute still in Force, that makes it Felony for any Man willingly to burn his own House; the Reason is founded on this, that by so doing he may probably destroy the Dwellings, and perhaps the Lives, of adjoining Inhabitants: And is it not a parallel Case, if a Man from a free and deliberate Choice, sets his own Veins on Fire, and inflames his Blood with the Small-Pox, which by its contagious Quality may endan-

ger the Lives of many others? Either that Disease must be declared not infectious, or the Consequence is unavoidable; and though he has made Provision for himself, and by the Means has undergone a mild and safe Distemper, yet, as I said before, when the Infection spreads in the Neighbourhood, many may be seized with a dangerous and fatal Kind: And one would think that this Reflection should stagger a Man of Prudence and Virtue, and make him hesitate and consider well with himself, before he ventures upon a Practice, that seems a great Breach of Christian Charity, and a Violation of Justice.

After all it must be acknowledged, that though the Operators were inconsiderate and rash in their boastful Promises, yet if it can be made appear, that their Method has produced a safe and mild Kind far more frequently than Nature alone, or assisted, has done; that they never propagate the dangerous Confluent Sort, and that exceeding few have miscarried, if compared with the immense Number, that have escaped: If this Comparison, I say, be adjusted, between Nature and the inoculating Art, and by a regular Calculation, the Amount is so much superior on the Inoculator's Side, then indeed a great deal might be said to encourage this Operation; but to proceed in this Computation by a reasonable Method, it must be considered first, what great Numbers recover by Nature singly, or assisted by Art, without

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out being Inoculated ; then what Number^s more might never have had the Small-Pox, had they never undergone that Operation ; and lastly, how many of those, who have been Inoculated, may notwithstanding several Years after, fall into that Distemper : And till this be done, it will be difficult to settle the Balance on either side ; and therefore it would be a desireable Thing to learn how many fall sick and dye of the Small-Pox, in each Parish of this City in a Week, and then to compare them with the Number of those who escape ; though this in one Respect would not be strictly just, for a great many in poor and needy Families might have died for want of proper Remedies, due Care, and the Conveniencies and Necessaries of Life. If this be considered, and the Deductions granted, it is probable it might appear that the Proportion of those that escaped by Inoculation, especially if Allowance be made for those that may have them afterwards, as observed before, it will be uncertain whether the Persons recovered by Inoculation, exceed the Number of those that escape otherwise, or that might have escaped, had they not wanted the necessary Means of Food and Physick : For by this Computation, the Number of the last may amount to fourscore or a hundred, to one that dies, according to Dr. *Wagstaffe's* Conjecture ; for a certain Calculation cannot be made : And if a Discount be allowed for those of the inoculated

Persons, who otherwise might never have had the Small-Pox, or that may hereafter die of this Distemper, tho' they had been inoculated, the Proportion of each Side may be brought nearer to an Equality; and then what Advantage can accrue to the People from this novel Practice? And if this be so, what wise and considerate Person would venture upon Inoculation, when there is an equal Chance for his Life, if he lets it alone?

But I have two Things more to offer, that may discourage this Operation in the Judgment of impartial and reflecting Persons, the first is this; It is confidently affirmed, that Inoculation always calls forth a mild and favourable Sort, and by this Means prevents the Patient's falling into the Confluent Kind, which is always dangerous, and often mortal. Let us search into the Reason and Nature of Things, that we may learn how this Event can be accomplished. It is evident that if the operative inoculated Matter makes that a mild and safe Small-Pox, that otherwise might have been of a dangerous Sort; this must be effected by singling out and separating the gentle and inoffensive Particles from the more noxious and malignant, with which they were combined and complicated, and to employ only the first in the Formation of the Disease; for if at the Time of Inoculation, no such putred Parts did adhere to the mild and friendly Matter, then the Small-Pox, which Way ever it had been produced, whether
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by Inoculation, by Nature, or the common Way of Infection, must have been of the safe and gentle Sort, being constituted wholly of mild and safe Materials; and therefore, that it is a mild Sort is not owing to Inoculation, for it could not have been otherwise; let it then be supposed, that a Separation being made by the inoculated Matter, only the mild and kindly Particles were called forth and beckned, I know not how, to come away; which starting from those of a malignant Quality, and uniting together, conspired to form the Small-Pox, and determined to admit none of the dangerous and putred Particles into their Company: Let this be granted, tho' it might puzzle a considerable Philosopher to account for such an Effect, and tell the World how this can be done, that is, how the Inoculated Matter of a mild and gentle Nature should be endowed with so much Sagacity and Choice, as to stir up and assemble only friendly and gentle Particles like its own, having first disengaged them from their Union with others of a noxious Nature; I demand what is become of those malignant Parts, which would have made a terrible Disease, had they not been disengaged and divided from the others of a mild Disposition? The Answer must be, that they are left behind in the Blood; for it cannot be pretended, that they were any Way conquered, digested and expelled thence by this Operation; and if they are left behind in the
 Blood,

Blood, must not the adhering of those putred Particles to the Seeds and Principles of any other Disease, acute or chronical, be afterwards of a dangerous Consequence, either by improving or heightning a simple and safe Fever, into one ill conditioned and of a hazardous Event, or by associating with the Principles of any other Diseases, and adding their Putrefaction to them make those Diseases to be of the worst Kind, and then what has the Patient got by the Inoculation? Suppose he has escaped a dangerous Small-Pox, that is, one that would have been so, had it not happily been prevented by this Operation; yet is he not still obnoxious either to a violent Fever, or other Distempers equally hazardous, from the putred and malignant Particles that were separated from the mild and gentle Seeds of the Small-Pox by Inoculation, but still left in the Blood to produce in Time a no less terrible Disease than the Confluent Kind of that of which we are discoursing.

If it be said, that the Operation made upon Children and young Persons, does not prevent a Small-Pox from being Confluent, by separating the Matter of it from any putred Parts at that Time; but while the Patient is young, the Inoculation calls forth the Matter, while it is mild and unhurtful, which if the Child grew up and became adult, would by the Addition of ill Humours afterwards contracted, prove a very bad, and perhaps a fatal Sort: I answer, that still the same Difficulty

ficulty recurs, as will presently appear. It must be allowed that the Principles, or Seeds of the Small-Pox, either are actually interwoven with the *Stamina*, or Principles of Life, and so are inbred and coeval with our Beings, or else there are such particular Impurities at first complicated with the Blood, that are soon improved and heightened into this Distemper, or are readily disposed and prepared to receive infection from abroad: And it must be granted, that these Seeds are at first mild and apt to produce the safe Distinct Kind, which appears from this, that Children have for the most part this gentle and temperate Sort, for generally speaking the Seeds are friendly at first; but afterwards, when they have by long Continuance in the Blood associated many other noxious Particles, and assimilated them into their own Nature, by the Adhesion of these, and the perpetual Access of more, they grow putred and malignant, which were mild and unhurtful before. Hence it comes to pass, that the longer it is before Men have this Distemper, the more dangerous it proves; and this likewise is the Reason why the Confluent Kind is so rife among those who inflame their Blood with excess of Wine and strong Liquors, and fare deliciously every Day: These luxurious Persons, that live high, and use little Exercise to purify and free the Blood, are full of noxious Impurities, which combined with the Seeds of the Small-Pox, raise them to a malignant

lignant and pernicious Nature. It is plain then that the safe and Distinct Kind, far exceeding in Number the dangerous and Confluent, shews that the Materials of the Small Pox are at first gentle and benign, and continue so till corrupted and depraved by the impure Humours it from Time meets and unites within the Body, by which unhappy Confederacy it becomes dangerous, and often destructive. Now let it be granted, that the Inoculation performed on Children, prevents the Danger of having a bad Sort in riper Years, when many ill and putrefied Humours generated in the Blood after Childhood, might have produced, as it often does the worst Sort, by adhering to, and combining with the Seeds of the Small-Pox, a first mild and favourable: Now, as I said, the same Difficulty recurs; for those ill Humours which will be generated and collected in riper Years, will unite or joyn themselves with the Principles, though not of the Small-Pox yet of some other Disease, from which the Danger will by that Means be as great, as if the Patient had laboured under the Confluent Kind of the Small-Pox: So that it is very evident, that should it be granted, that a gentle and kindly Disease will be always the Consequence of Inoculation in young Persons; yet since afterwards many putred and noxious Humours may be produced in the Blood, which it is allowed would have rendered the Small-Pox putred and malignant

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by uniting with them, had not the Inoculation prevented it; is it not clear, that those noxious, or putred Humours bred afterwards in the Body will join their Forces and strike as easily with the Ferments and Principles of other Distempers, as they might have done with the original Seeds of the Small-Pox, had they remained there, and raised them to as dangerous a Nature. Upon the Whole it appears, that though it be granted that Inoculation always propagates a kindly Sort of Small-Pox, and saves Children from the Danger of a Flux, or Confluent Kind, which they might contract in riper Years, yet it leaves them altogether in as great Hazard of being attacked by other terrible Distempers, which become so by the Accession or Adhesion of the putred malignant Particles of the Blood, which could not be carried off by Inoculation, before they were bred: So that if the Operation delivers the Patient from a Confluent, and Hazardous Small-Pox, it does but transfer the Danger to some other Disease with which the malignant Particles afterwards generated will combine; suppose a simple Fever, or any other unhurtful Distemper, which by that Addition may prove malignant and mortal.

If it were true, that any putrid Particles lurking in the Blood, were carried off by Inoculation, which, it is clear, they are not, for otherwise the Disease would always be of the Putred and Confluent Kind; or if it could

prevent the breeding of noxious Humours in the Blood for the future, which may be as dangerous by combining and taking Part with the next Disease, that is stirred up there, this Operation would be of admirable use, but since that is not to be hoped for, I cannot see what Benefit it brings to Mankind. I ask Pardon of the Reader for being so diffusive and copious on this Argument; for I thought it necessary to be so, not only because the Subject is new, but because a thorough Discussion of it sets this Controversy in a true and clear Light.

My second Objection against Inoculation, which was suggested to me by Dr. *Wats*, a Gentleman of superior Abilities, Integrity, and great Diligence in his Profession, is this, that it is very probable, that the Seeds of other Distempers may be communicated together with those of the Small-Pox, contained in the purulent Matter, taken from the ripe Pustules of the Patient, and inoculated upon one that never had the Disease. The Principles of Diseases are of the minutest Size, and some of them, that were lodged in the Blood, may well be supposed to adhere to the Matter that produced and fed the Pustules, and still to be contained in the inoculated Matter conveyed to another. It is allowed, that the Principles of the King's Evil, of Consumptions, Lunacy, and Venereal Diseases, are conveyed from Fathers to their Children successively through many Generations;

nerations: and are therefore called Hereditary; a sad Inheritance! And may not some of the Seeds of these grievous Distempers, intangled and complicated with those of the Small-Pox, be excluded to form and increase the Pustules, and be after conveyed with that Matter, which is taken from them, and so be inoculated together with the Small-Pox? And though none of these Diseases presently appear, may not their Seeds operate by Degrees and shew themselves, when they have acquired greater Vigour by assimilating and corrupting such Parts of the Blood and Humours, which they find there, that approach nearest to themselves in their Quality, and by such daily Accessions grow in Strength, and at Length break out in a formal Distemper; which, may likewise be said of several other Diseases, though not Hereditary? There is nothing unnatural or repugnant to Reason in this Supposition; whence it will follow, that the Operator intending to convey but one Disease, may transfuse several at the same Time into the Veins of a sound and healthful Patient, and thereby sow the Seeds of many dreadful Productions.

It may here properly be enquired, why our Inoculators have not extended their Operation to the Plague, since the Parity of Reason so much encourages it: There are many intermediate Degrees between the most malignant and the mildest, or least dangerous Kind of that terrible Disease. It is

plain, that at *Constantinople* this Disease is not so virulent and destructive as it is usually in this Country, and as it lately was in a neighbouring Kingdom : For in these Parts it often cuts off in a Summer vast Numbers more than it does in *Turkey* ; and I am informed by those who have resided many Years in *Constantinople*, that the Plague there is not attended with those Tokens of Putrefaction and Malignancy, I mean, Carbuncles, Tumours, blue Spots and Blanes, which are the Symptoms that accompany this Distemper here ; and therefore, though it happens often in *Turkey*, yet it does not make such Havock and Devastation among their People as it does among ours. It is observed, when a raging Plague of the most virulent Nature has by Degrees spent its Fury, it grows less destructive, and Multitudes more escape now than before : And at this Time, when the Plague is weakened, it throws it self out in Boils or inflammatory Tumours, which Nature, assisted by the Surgeon's Art, often ripens, and brings to Suppuration, and this seasonable Discharge frequently delivers the Patient, and sets him out of Danger : Now suppose a small Portion of this ripe Matter should be inoculated on a sound Person ; is there not the same Reason to expect that this Inoculation should produce a moderate Plague, that is, one of less Malignancy and Danger, whereby vast Numbers may escape in populous Towns
and

and Countries where the Infection rages, being delivered from all Apprehensions of catching afterwards the highest and most fatal Contagion? Is not this, I say, as reasonable, as that the Matter taken from one that lyes ill of the gentlest and most kindly Small-Pox, should propagate only that Sort, and not the dangerous? If this Arguing be not close and conclusive, let the Weakness of it, and the Disparity of Reason, be made appear: But if it be just and valid, then if the Inoculators are by their Operation highly useful and beneficial to the World, as their Promoters affirm, then, I say, I have refined upon that Invention, and have started a Practice of greater Importance, and far more extensive Benefit to Mankind, and shall leave it to them to make their Advantage of it.

But if, notwithstanding what I have alledged in this Dissertation, to discourage a Practice newly introduced into this Country, it shall still make its Way, and grow in Fashion; I have another Method of propagating the Small-Pox, that is altogether as effectual, much more clean and decent, and which is freer from several Objections that lye against Inoculation, and that is the Conveyance or Communication of the Small-Pox from one to another, by a voluntary and designed Infection, which is this: Let any one, desirous to catch the Contagion, be carried to a sick Person when the Pustules are falling, or fully ripe, let him sit by the Patient's

tient's Bed, and let a Handkercheif or Piece of Linen, taken out of the Patient's Bosom, be smelt to, and let the Person to be infected wear it in his own Bosom, and let this be repeated several Times, and let him carry the Linen home in his Breast; or let him bend himself down to the Patient, while he breaths upon him several Times, and there is no Reason to doubt but the Infection will generally be caught; for some particular Persons are not by Nature disposed ever to receive it, but pass a long Life uninfected, tho' frequently conversant with the Small-Pox.

As involuntary and undesigned Infection received from others, is the common Way of propagating this Distemper, so it may likewise be communicated as certainly, when by Choice and Purpose, any Person who has a Mind to be infected, will visit and nearly converse with Persons, that actually are sick of this Disease. And this has really been Matter of Fact; for I know it was customary with Dr. *Sydenham*, when there was a mild and favourable Small-Pox going about, to carry young Persons, his Relations or Friends, to visit one of his Patients, to sit by him, and converse with him, and he seldom failed of his Design; the Visitor generally caught a favourable Small-Pox, and soon recovered. As to what the Operators alledge, that they prepare before-hand the Person to be inoculated, and being apprised what the Disease is, when it makes its first Attack, they know the better

ter how to manage for the Patient's Security: And is not the Case the same, if a Physician should carry his willing Friend, or Relation, to catch the Infection from one that has a mild distinct Sort, may he not prepare him by purging, bleeding or vomiting, or how he thinks fit? and does he not know what Disease he must expect, when the Patient shall begin to complain? Here all Things are on an equal Foot; but the Method I propose has in other Respects many Advantages over that of Inoculation; for it is not only a more decent and elegant Manner of conveying the Contagion from one to another, but it does never delude you by bringing forth an imaginary mock Small-Pox, consisting in Itch-like Appearances, and various Flushings of the Face and Skin, after which the Sufferer, notwithstanding the Operator's Promise, is still obnoxious to the real Kind; this low and defective Imitation of the Small Pox is an extraordinary Production, not of Nature, but of Art, reserved for the Honour of the Inoculator. Nor is this Way liable to another Objection that I have brought against his Operation, which is, that the gross and purulent Matter, that is inoculated, may contain in it the Seeds of various other Distempers, for they, being of a minute Size, and small beyond Conception, thousands of them may lodge together with the Principles of the Small Pox; and therefore

fore must together with them be communicated to the Veins of the Person inoculated ; for the Effluvia, or infectious Particles, that flow from the Body of the sick Person are very little, even unperceptible, and cannot admit those Combinations with the Seeds of other Distempers, as before-mentioned ; or if they can, it must be in a far inferior Degree than that which the inoculated Matter is capable of ; neither is it, as that is, conveyed immediately into the Blood by a Wound made for that Purpose, which must needs communicate them in greater Plenty.

I have thus set down the Objections and reasonable Prejudices, which I have conceived against Inoculation ; and it is very probable, that for some of these Reasons among others, the Inoculators who practise upon the *Greeks* and *Armenians* in *Constantinople*, have not yet propagated their Art among the Musselmans ; for, as I am informed, this Invention does not obtain among the Native *Turks*, but is confined to the Nations before-mentioned, who inhabit with them ; and tho' from a Principle of Predestination they forbear the Use of Medicines, or other Preservatives while the Plague reigns, yet, notwithstanding that Principle, they have Recourse to Remedies in other Distempers acute and chronical and probably then in the Small-Pox : And from such Exceptions it is likely, that the
Christian

Christian Nations, who lye upon the Frontier of *Turky*, and must have been soon and well acquainted with this Operation, were never drawn in to imitate their Example. One would have thought, that these Neighbours, who had great Opportunities of informing themselves thorowly of the Success of this Practice would have introduced it into their own Country, and have propagated it over Christendom; and therefore it must be very wonderful, what Grounds and Motives the *Germans* and *Hungarians*, near Neighbours to *Turky*, go upon, while they refuse to follow this beneficial Method of Inoculation, and have by that Neglect shewn themselves Enemies to their own Country, unless they proceeded upon the Arguments before set down, and perhaps others as convincing. The *French* and *Dutch* are not so stupid and incapable of Reflection and useful Observation, but they would certainly have imported this Invention from *Constantinople*, where some of them have, as Ministers, or Merchants, constantly resided, had they not discovered some unanswerable Objections to the Practice of it. And though this is not a downright Demonstration, yet it is, however, a very reasonable prejudice against Inoculation, that all the Nations of Christendom, who must be allowed to have a Principle of Self-Preservation, and to be concerned for their own Health, as well as the Safety and Good

of their Friends and Relations, and the Benefit of Mankind, as much as the People of *Great Britain*, have universally refused to introduce this Innovation in Physick, into their Native Countries.

F I N I S.



T H E
C O N T E N T S.

P A R T I.

<i>O</i> f the Nature of the Small-Pox,	Page 7
That it is a Fever,	ibid.
What a Fever is,	p. 8
Of the several Sorts of Fevers,	ibid.
The Small-Pox is a Fever of the Inflammatory Kind	p. 11
An Account of its efficient and material Causes,	p. 12
How it is distinguished from other inflammatory Fevers,	ibid.
How this Distemper is first introduced into the Body	p. 13
The animal Spirits receive the first Impressions of it,	ibid.
Of the several Sorts, or Species of the Small-Pox, (viz.) the Distinct, Middle and Confluent, or Flux Kind,	p. 14
	The

The CONTENTS.

- The History of the Distinct, that is, the most gentle and favourable Kind of Small-Pox,* p. 14
- An Account of the various and peculiar Symptoms that accompany this mild Sort from its Rise to its Termination,* p. 17
- The Method of Cure in this favourable Sort,* p. 42
- Why this is called the Distinct Sort, and an Account of its different Degrees,* *ibid.*
- Of the Middle Kind: An Account of their Nature, and by what Marks and Peculiarities they are distinguished from the other Sorts,* p. 21
- This is not yet reckoned by any Writers as a different Species or Kind of Small-Pox from the Distinct and Confluent, but notwithstanding proved to be so by evident Reasons,* p. 22
- The Physician's Province, wherein he may be principally useful, lyes in this and the Mildest Sort of the Confluent Small-Pox,* p. 23
- Of the Confluent Kind,* *ibid.*
- By what specifick or characteristick Marks this Sort is discriminated and diversify'd from the Distinct and Middle Kind,* p. 24
- An Account of its poisonous and malignant Nature, and in what it consists,* p. 25
- The History of the peculiar Symptoms that attend this dangerous Sort thro' all its Stages, that is, (1.) From the first Sickness, or Invasion, to the Eruption of the red Spots, or Pustules. (2.) From that Eruption upon the Skin till their Maturation commences. (3.) From the Beginning of the Maturation to the End of the Distemper,* p. 26
- Of the Method of Cure in this dangerous Kind.* p. 52
- Blood-letting, when the Maturation is near, or begun, condemn'd.* *ibid.*
- Purging Medicines at, or after that Time, unprofitable and hazardous,* p. 75
- Vesicatories, or Blisters, when useful, and for what Reason,* p. 74
- Vomitive Remedies recommended, in what Circumstances, and for what Ends,* p. 55

The CONTENTS,

PART. II.

A Dissertation upon the Modern Practice of Inoculation, page 81

The Introduction, *ibid.*

The Natives of Great Britain fond of Novelties in Religion and in Physick, *ibid.*

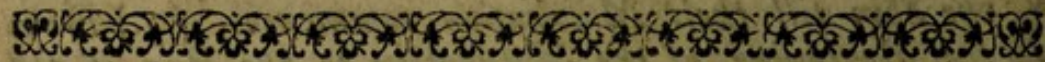
An Inquiry, Whether those Persons who first introduced into this Kingdom the foreign and novel Practice of Inoculation have made good what they promised and pretended to effect by this Operation, p. 85

Inoculation does not always bring forth upon the Skin any Kind of Pustules, or Eruptions, at all. p. 86

When it brings forth a spurious Sort of Eruptions, very different from the Small-Pox, those ingenuine Eruptions do not always prevent the catching of the true Small-Pox afterwards, *ibid.*

The Operators do not always produce the mild, safe and distinct Kind, but sometimes the confluent and dangerous Sort are produced, *ibid.*

Two great Objections urged against this Practice of Inoculation. *ibid.*



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