

**An essay on the different causes, of pestilential diseases, and how they become contagious. With remarks upon the infection now in France / By John Quincy, M.D.**

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Quincy, John, -1722.

**Publication/Creation**

London : E. Bell & J. Osborn, 1721.

**Persistent URL**

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OF LONDON MEDICAL SOCIETY  
D. 9. 1

A N  
ESSAY  
ON THE  
Different Causes  
O F  
*Pestilential Diseases,*  
And how they become Contagious.  
W I T H  
REMARKS  
Upon the INFECTION now in  
*F R A N C E.*

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By JOHN QUINCY, M. D.

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The Third Edition, with large Additions.

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L O N D O N:

Printed for E. Bell, at the Cross-Keys and Bible in  
Cornhill; and J. Osborn, at the Oxford-Arms in  
Lombard-Street, 1721.









T H E  
P R E F A C E.



*THE Substance of the following Pages has been partly extracted from Papers wrote some Tears ago with another view; and partly put together since our present apprehensions of a Pestilence from abroad: The Enumeration of so many Causes of a Pestilence, or like Changes, as have no immediate Relation to the present Case, may to some perhaps seem Superfluous; but my design hereby hath been only the better to inculcate a right understanding of a Contagion, which is the last Consequence, and highest degree of Aggravation, they are capable of rising to; and gradually to lead Persons, not well accustomed to such Matters, from the more obvious, to the more secret means of bringing such terrible Changes into our Constitutions.*



*What relates to such precautionary Means for our Security, against the Infection now abroad, as concerns the Magistrate, I have presumed to say but very little to; because that has been under the direction of much abler Judges; yet what I have ventured to suggest concerning a Regulation in the Bills of Mortality, I cannot forbear being so partial to, as to wish it may be duly considered, by Persons of more Compass and Penetration in such matters; and it has been much my concern not to have had an opportunity of Communicating it in a more private manner to Persons, whose Authority might have given it greater weight; because, besides the advantages immediately proposed to be answered from it under our present apprehensions, I cannot but conceive it to be applicable to a great many other useful Ends, as every curious and inquisitive Person may easily apprehend.*

*Because the Antidotes and Medicines communicated by Dr. Hodges, are for the most part obsolete, I have ventured to add some Formulæ more suitable to the modern Practice,*  
*and*



## The PREFACE. v

*and more easy to be procured from the present Stock of officinal Compositions: But all these I submit to be complied with, or altered, as different Exigencies may require, or as better Judges may think fit.*

*I find that some general Directions on this Subject are liable to misconstructions, especially by such who are willing to understand things in a wrong Sense; by which means Disputes are raised about the use of Alexipharmicks, Fumigations, Fires, and other general Topics, which have little other Foundation, than a wilful misapprehension; for it cannot be imagined, that these are either good or bad in all Circumstances; but that they require the Conduct and Direction of able Judges, as particular Occasions or Symptoms demand or forbid them.*

*But of all the Excursions and Particularities, in which some are fond of indulging themselves, I cannot think any so extravagant and blameable, as Hypotheses, and drawing Consequences of Practice from supposititious Principles: The Theory of Medicine abhors any such delusory*



*delusory Foundations, and requires the severity of Demonstration from Facts, and the known Properties of Matter; and more especially does the Necessities we are now under of Arming against the most powerful Enemy, call for Assistances of a more certain Nature; yet either from the wantonnesses of a light Imagination, and a false Philosophy; or from a Vanity to be taken Notice of, the Publick has upon this sad Occasion been amused with the Figments and Conceits of Naturalists, who from the Casualties and Distemperatures incident to Plants, and other inanimate Productions of Nature, have drawn Conclusions to support very wild Conjectures concerning a like Procedure in the Diseases peculiar to Mankind.*

THE





OF THE  
 Different Causes  
 OF  
*Pestilential Diseases, &c.*



HERE is hardly any one Subject more largely treated of by Physical Writers, than that of *Pestilential Diseases*; and the Reason of it I take to be, the Frequency in all Ages and Countries, of Alarms from such dreadful Destroyers; and the uncommon Impressions they are apt to make upon the Minds of those, whose Profession naturally leads them to enquire into their Causes. But in this it has fared as with all the other Branches of that noble Science. The Conjectures and



Opinions of Persons have at all Times been too much influenced by the Philosophical *Hypotheses* in Vogue, infomuch that it is almost an endless as well as an unprofitable Task, to examine into them all: And as such an Enquiry is not consistent with the intended Brevity of these Pages, I shall pass them by, only just taking Notice of the most considerable Opinions, under which, most that has been advanced to any Purpose may be reduced.

ALL Authors upon this Subject, may be reduced under these two Sorts: Such as ascribe them to the immediate Wrath of Heaven, and account them as Punishments inflicted by the immediate Exertion of a Supernatural Power; and such as assign for their Origin some natural Cause.

ALTHOUGH too great a Regard cannot be had to the Author of our Beings, yet Care should likewise be taken, not to ascribe every Calamity to the immediate Exertion of the Almighty Power; for it seems much more worthy of the Divine Being so to order it, that from the Course of second or natural Causes, Punishments shall pursue Offenders, than to imagine the frequent Exertion of his Power in a Way  
super-



Supernatural to inflict such Punishments. But there is a great deal of Reason to suspect, that the Number of this Sect was very much increased by such, as either out of Ignorance in other Causes, or out of an affected Devotion, thought it their Interest to come into this Opinion, and pretend to do greater Cures by certain religious Performances, and their Intercession with Heaven, than was in the Power of Medicine, of which they knew but very little.

OF those that assign some natural Cause, there are several Opinions: Some ascribe them to astral Influences, to malign Conjunctions and Radiations of the Heavenly Bodies. We find, from the most remote Antiquity, not only *Pestilential Diseases*, but likewise a great many others, ascribed to the same Causes: But all the Reasonings about this Conjecture have been very obscure and perplexed until the present Age, when Sir *Iaac Newton* first taught Men to think justly, and talk intelligibly about the Motions and Influences of those remote Bodies upon our *Atmosphere*: And upon his Theory Dr. *Mead* has since further proceeded to determine their Efficacies upon humane



## 6      *The Causes and Cure*

Bodies. By which, as it does appear that they affect us no otherwise than as they occasion the several Variations of the Seasons, and different Constitutions of the Air, the Reader must be left to the Consideration of such Causes.

ANOTHER Cause is charged upon Steams and Exhalations from putrefying Bodies. There are Abundance of Instances to support this Opinion, that manifestly discover very fatal Effects from such Causes. As Battels are generally fought in Summer-Time, when by the Heat of the Season Things are most disposed to Putrefaction, so it has often been observed, that the Plague has appeared after great Slaughters of Men in Fight, as appears by undoubted Testimony from *Julius Alexandrinus* (a), *Diodorus Siculus*, and a great many others, too tedious to mention. *Ambrose Parrey* (b) gives a Relation of a Plague, that laid waste almost a whole Country, which had its Rise from the Stench of a great many human Carcasses that were thrown into one Pit, and left Rotting uncover'd. *Joannes Wolfius* (c),  
*Forestus*

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(a) De Bello Punico.

(b) Lib. 10. Cap. 3.

(c) Tom. 1. memorab. Cent. 10.



*Forestus* (d), the abovementioned *Parrey* (e) and *Agricola* (f), all take Notice of Plagues arising from the Stench of putrefying Fish that were thrown dead upon the Shores.

OTHER Steams of the same Efficacy frequently arise from the Putrefactions of stagnant Waters, and other Bodies, which, in some particular Constitutions of Air, are apt to corrupt, and emit very offensive *Effluvia*. Dr. *Mead* (g) relates from *Diogenes Laertius* (h), that *Empedocles* observed a pestilential Disease to afflict the *Salinuntij*, from the Putrefaction of a certain River; to remedy which, he contrived to have the Streams of two other neighbouring Rivers drained into it, which, by their Increase of the Current, with an additional Weight and Pressure of Water, brought the former to its usual Sweetness, and so put a Stop to the Plague.

TO this Purpose Dr. *Plot* (i) observes, the Reasons why *Oxford* is now much more

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(d) In his *Scholium* upon *Obs.* 9. *Lib.* 6.

(e) *De Peste*, *Lib.* 6.

(f) *De Peste*, *Lib.* 1.

(g) *Præf. de Imperio Solis ac Lunæ, &c.*

(h) *Lib.* 8. *Segon.* 70.

(i) *Nat. Hist. of Oxfordshire*, *Chap.* 2.



healthful than heretofore, to be the Enlargement of the City, whereby the Inhabitants who are not proportionably increased, are not so close crowded together; and the Care of the Magistrates in keeping the Streets clear from Filth: For formerly (he says) they used to kill all Manner of Cattle within the Walls, and suffer their Dung and Offals to lie in the Streets. Moreover, about those Times the *Ifis* and *Cherwell*, through the Carelessness of the Townsmen, being filled with Mud, and the Common-Shore by such Means stopped, did cause the Arise of Malignant Vapours whenever there happened to be a Flood. But since that, the Care and at the Charge of *Richard Fox* Bishop of *Winchester*, in the Year 1517, the Rivers were cleaned, and more Trenches cut for the Water's free Passage, the Town has continued in a very healthful Condition; and in a particular Manner so free from Pestilential Diseases, that the Sick in 1665, which raged in most Parts of the Kingdom, never visited any Person there, although the Terms were there kept, and the Court and both Houses of Parliament did there reside.



TO this Cause, 'tis very probable, is owing the Frequency of the Plague at *Grand Cairo* in *Egypt*, and in the Island of *Sardinia*, as *Pausanias* and others relate: Although indeed *Fropper Alpinus* (a) charges a great deal of the Cause of that at *Cairo*, upon their continual Commerce with such Nations as are seldom without such infectious Diseases. And for this Reason it is, that we find all those Countries, which most abound with Swamps and Standing Waters, to be most unhealthful, especially in the hottest Seasons; except, as in several Parts of *Italy*, such Lakes have any Communication with the Sea, or some large Rivers. To this Purpose *Piso* (b) frequently observes those Places to be most subject to such Calamities, where there are constant Heat and settled Calms, as such a Temperament of Air most disposes Bodies to Putrefaction and Corruption, as in *St. Thomas Island*, and *Guinea*: And, on the contrary, that notwithstanding the Intensity of Heat, if the Fluids are but agitated by Winds, Tides, and Currents, there is little Danger of such Diseases; and the less still, the more regular and constant the Seasons are upon

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(a) De Medicin. *Egypt*. Lib 1. Cap. 15.

(b) Hist. *India* and *Brasil*.



upon other Accounts: By which Means it is, that between the *Tropicks*, and even under the *Equator*, it is very healthful.

UNDER this Head it may not be improper to observe, that too scanty and mean a Diet, and Feeding upon unripened and un-sound Fruits, are frequently charged with a Share in Mischiefs of this kind. *Josephus* (a) and *Julius Caesar* (b) amongst Historians; *Forestus* (c), and several other physical Writers, give Accounts of Plagues from the like Causes. *Galen* (d) is very positive in this Matter; and in one Place (e) accuses his great Master *Hippocrates* with neglecting too much the Consequence of a bad Diet, and ascribing some Mischiefs arising from thence to a bad Air. And upon this is grounded the common Opinion of a *Plague's* following a *Famine*; in which Circumstances, the poorer sort, who feed meanest, generally suffer most, as it frequently happens in long Sieges, and Armies ill supplied with Provisions. Thus

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(a) *De Bello Judaico*, Lib. 7. Cap. 26.

(b) *De Bello Civili*, Lib. 2.

(c) Lib. 6. Obser. 9, and 26.

(d) Lib. 1. de differ. Feb. Cap. 3. & de cibis mali & boni succi.

(e) Comment. in lib. de natalium, text 4.



Travellers report, that *Surrat* in the *East-Indies* is seldom or never free from a Plague, which is ascribed to the mean Diet of the Natives, who are *Banians*, and feed on little else than Herbs, Water, Rice, and such like pitiful Fare; for it is observed, that the *Europeans* who trade there, are in no Danger of being infected, because they feed well on Flesh, and drink Wine, which secures them against those malignant Diseases.

A Third Cause is ascribed to Mineral Eruptions and subterraneous Exhalations. *Pestilences* from this Cause are more infrequent than from several others; because such Eruptions hardly ever happen but upon Earthquakes, or Breaking into the Bowels of the Earth by Mines, Pits, Wells, and the like; and then too, in Order to produce a *Pestilence*, it is necessary that whatsoever exhales and mixes with the ambient Air, must be of such a Nature, as to render it unrespirable; or to communicate by it such Particles to the Animal Juices as will pervert their natural Crasis, and disturb their due Secretions; which does not often happen, for there are frequent Shocks of the Earth from intestine Fermentations, which are not followed by any such Mischiefs, as they



they happen only from the Struggle of such Principles, as when they have got Vent, neither of themselves, or by any Thing emitted with them, are of that disagreeable Nature, as to give any Disturbance to the Animal OEconomy.

CAROLUS *de la Font*, (a) indeed, as well as several others, lays great Stress upon Causes of this kind, and charges *Pestilential Diseases* chiefly to Mineral Exhalations of divers kinds; as *Arsenical*, *Mercurial*, *Sulphurous*, &c. which he imagines the ambient Air often to be overcharged with, either from the Heat of the Sun, Earthquakes, or subterraneous Fires. To all this, Persons of different Opinion object, the Infrequency of Plagues in *Calabria*, *Naples*, and several Parts of *Sicily*, where there are manifestly very great subterraneous Fires, such as occasion violent Earthquakes, and many furious and plentiful Eruptions of metallick and mineral Fumes. A very distinct Relation of which, from his own Knowledge, may be met with from Dr. *Bernard Connor*, (b) who has been very curious in his Enquiries hereinto.

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(a) *Dissert. de Peste.*

(b) *De montis Vesuvii Incendio.*



BUT however Authors differ upon this Head, several very odd Relations are to be met with in History of malignant and deadly Sicknesses from these Causes. That Story is very strange which is related by *Ammianus Marcellinus*, (a) and taken Notice of by *Cardan* and *Riolanus*, that a most grievous Pestilence broke out in *Seleucia*, which, from thence to *Parthia*, *Greece*, and *Italy*, spread it self thro' a great part of the World, from the Opening an ancient Vault in the Temple of *Apollo*; and that it raged with so much Fury, as to sweep away a third part of the Inhabitants of those Countries it visited.

IT is needless to trouble the Reader with many Relations of the sudden and strange Effects of some Steams arising from Mines and Pits, which are generally termed by our Colliers *Damps*, because almost every Body has already been acquainted with such Accounts.

D R. *Plot* (b) tells us, That about Twenty Years since, two Persons were employed to dig a Well in the Parish of *North-Leigh* in  
Oxford-

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(a) Hist. 73.

(b) Nat. Hist. of *Oxfordshire*, Chap. 3. Par. 31.



## 14 *The Causes and Cure*

*Oxfordshire*, but upon being taken ill, left off the Work: Whereupon it was undertaken by two others of *Woodstock*; who, before they could do any thing considerable in it, sunk down, and died irrecoverably in the Well: Which being perceived by a Miller hard by, and he coming to their Assistance, fell down dead upon them. Another also venturing to do the same, with a Rope tied about him, fell from the Ladder just in the same Manner; and though presently drawn up by the People above, yet he was scarcely recover'd in an Hour or more. And since then, upon a Bucket's falling into a Well in another Part of the Town, a Woman persuaded a strong lusty Man to go down a Ladder to fetch it, who, by that Time he had got half way down, fell from the Ladder into the Well; upon which, the Woman called another of her Neighbours to his Assistance, who, much about the same Place, met with the same Fate, without giving the least Sign of Change; so fatal (says the Doctor) are the Damps of that Place. Dr. Boerhaave (a) tells a Story that happened at *Dublin* in *Ireland*, just of the same Nature. And in

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(a) Nat. Hist. Cap. 18. Sect. 4.



In the *Philosophical Transactions* (a), there are the like Relations of Damps in the Coal-Mines belonging to the Lord *Sinclair* in *Scotland*.

THE most surprizing Effect of these subterraneous *Effluvia* that I ever met with, is in a Relation of Dr. *Bernard Connor*, of certain Persons in *Paris* digging deep in a Vault or Cellar, who were so suddenly transfix'd by some subtile Vapour, that when a Servant-Maid came down to speak with them, she found them in Postures as if at Work; one with his Pick-Ax advanced, another with his Shovel full of Earth, half lifted up, and a Woman sitting by with her Arm upon her Knee, her Head leaning upon that Hand, with manifest Expectations in her Countenance of what they were in Search after.

THE same Author, from his own Knowledge, gives a very exact Account of a *Grotta* in *Italy*, much talked of, and commonly called *la Grotta de cani*, by this Author, *Crypta Canina*; But Dr. *Mead* hath since,



since, from his own Knowledge also, given a very particular and rational Account of this Place, and the Manner of its killing; to whom therefore the Reader may turn for further Satisfaction.

— ANOTHER, and more general Cause than any hitherto mentioned of these Maladies, is some bad and unwholsome Constitution of Air. Such Constitutions may arise from several Causes, which although they affect us in different Manners, yet as they are equally fatal, we call them all *Malignant* or *Pestilential*: In Order therefore to understand the better how we are differently affected by those different Constitutions, it will be proper to consider them somewhat distinctly, under these general Heads, *viz.* *A dry hot Air, hot and moist, cold and moist, and cold and dry*; to which most Variations of Air may be reduced.

THAT from the several Constitutions of Air, our Bodies are differently affected; and that most Diseases are in some Measure more or less influenced thereby, is quite out of Dispute. *Hippocrates*, in a great many Places, declares himself of this Mind: His whole third Section of *Aphorisms* is a Proof  
of



of it; and in several Places (a) he discovers his Opinion, that *Pestilential Diseases* have their Rise from hence. *Galen*, his best Interpreter, understood his *το θεον*, which some will have to be meant of somewhat Divine, or the immediate Hand of God, to be nothing else but a particular Constitution of Air arising from natural Causes; and that he was of the same Mind himself, is very plain from his own Writings (b).

IT is almost endless, as well as altogether needless, to cite all the Authorities for this Opinion, that might be collected from the most remote Antiquity down to the present Age. We shall therefore proceed to consider the different Constitutions of Air, according to the forementioned Distinction; premising only, that the Terms *Hot, Cold, &c.* are used in a twofold Sense, the one is *Absolute*, and the other *Relative*; by the former, viz. *Absolute Heat, Cold, &c.* is understood one simple Property of the Air only, as it is different not in Degree, but in Quality from others: By the latter, that is *Relative Heat, &c.* is meant certain Degrees of those

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(a) *Vid. Epidem, and de Aere, Aquis & Locis.*

(b) *Vid. Comment. in Epidem. Hippocrates.*



Properties: As the same Air may at the same Time be said properly to be both Hot and Cold, or Dry and Moist, as it is compared with another Air, either Hotter or Colder, Dryer or Moister; for with Regard to a hotter Air, it will be termed cold when at the same Time if it be compared to a colder Air, it would be accounted hot: And so of the rest. To which Distinction, it is very necessary to have constant Regard, to avoid Confusion.

THOSE Countries where the Air is hot and dry for the greatest Part, are related to be healthful, and free from *Pestilential Diseases*, except where there are great Swamps and stagnant Waters, or by any accidental Causes Bodies are exposed there to Putrefaction, the Steams of which render Persons Diseased. In such Countries, for the most Part of the Year, there is but very little Rain, and the Nights are comparatively colder than elsewhere, from the great Dews which then fall. As *Piso* (a) informs us, that the colder the Nights are in *Brazil*, and the more plentifully the Dew fall

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(a) Hist. Ind. & Brasil.



fall, the Inhabitants account it most agreeable to their Soil, and conducive to Vegetation; and Physicians reckon it much the most healthful for the Inhabitants.

THE Heat of the Air alone, where it is constant and uniform, does not appear to render Persons born in it, or long accustomed to it, any more unhealthful, than that which is more temperate. *Aristotle* \* indeed says, a hot and dry *Southerly* Wind will bring a *Pestilence*; but of such we have very few Instances, especially on this Part of the Globe. There is in *Livy* (a) an Account of a *Plague* at *Rome*, from a great Drought; and *Nicephorus* (b) relates such another: But these generally come from some other manifest Causes besides Heat, and in Places not accustomed to a dry Air.

BUT a hot and moist Air is very different. By *Moist*, is meant what arises from sudden or long Rains. This is the Constitution of Air that most Authors charge with being the greatest Instrument in *Pe-*

B 2

*stilential*

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\* Probl. 1.

(a) Lib. 1. Decad. 4.

(b) Lib. 15. Cap. 103.



*pestilential Distempers.* Hippocrates (c) ascribes a great deal to such an Air, and relates a *Pestilence* that had its Rise from great Heat, joined with *Southerly* Winds and much Rain. *Galen* is of the same Mind, as appears from several of his Writings (d), with many others, too tedious to mention. The Truth of this is likewise manifest from the Histories of those Countries, where there are long settled Heats, and afterwards much Rain, as in several Parts of the *East-Indies*, which are known at such Times to be most grievously afflicted with Fevers and Diseases of a very malignant Kind. The same we are informed of from some Places in *Africa* (e), viz. That if Showers fall soon upon the sultry Heats of *July* and *August*, pestilential Distempers certainly ensue. It may be generally observed here too in our own Climate, that the most unhealthful Times are after warm Rains, and the more if the Air is then agitated but little with Winds.

FROM

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(c) Epidem. Lib. 2 & 3. de Aere Aquis & Locis Aph. 11. Sect. 3.

(d) Comment. in Epidem. Lib. 3. de differ. Feb. Cap. 4. de Temperam. Lib. 1. Cap. 4.

(e) Vid. Purchas Pilgr. Lib. 6. C. 1. as also Joan. Le Hist. Afric. Lib. 1. Cap. 1.



FROM a cold and moist Air, we have little complained of, as to their occasioning these Diseases, unless such a Constitution sets in immediately upon a contrary Extream; for all sudden Changes of Weather are more or less unhealthful, as well as in other Respects of living; for which Reason particularly, *Corn. Celsus* advises to be very slow in all Alterations of Moment: And *Sanctorius* frequently inculcates the same in his *Aphorisms*, and tells us (a) how it is hurtful, both to go suddenly out of a hot Air into a cold one, and out of a cold Air into a hot one; and is also very particular (b) in the Inconveniencies of such a Constitution of Air we are now speaking of, setting in after the Heat of Summer. *Hippocrates* (c) does tell us of a *Pestilence* from long continued cold Rains, as likewise does *Fernelius* (d), but such Instances are not common.

THE last Constitution of Air we are to take Notice of, is that which is cold and dry, against which there are a great  

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many

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(a) *Medicina Statica*, Sect. 2. Aph. 18.

(b) *Ibid.* Aph. 6, and 29.

(c) *Lib. 3. Epidem.*

(d) *De Abdit. Lib. 2. Cap. 12.*



many very heavy Complaints. *Galen* writes of a most Raging Pestilence about *Aquileia* in *Italy*, that began in the very Middle of Winter, and had its manifest Cause in extream Cold. *Fernelius* (a) asserts the Rise of several Pestilences from the same Causes: As also does *Morellus* (b) observe great Malignities to proceed from some Northerly cold Winds. *Titus Livy* (c) likewise mentions a *Pestilential Constitution* arising from intense Cold; but *Physical Histories* abound with such Relations.

OF the strange and sudden Effects of intense Cold and dry Winds we have very surprizing Accounts from those who have travelled into Countries where they are the most frequent. Dr. *Bernard Connor* (d) before mentioned, relates, That when he was in *Poland*, it was asserted to him by very credible Testimonies, that it frequently happens in *Lithuania*, and some of the Northerly Tracts of *Muscovy* and *Tartary*; that it sometimes, through the Neglect of the Shepherds their small Cattle, as *Sheep*, *Goats*, and the like

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(a) Ibid.

(b) De Febr. purp. Cap. 2.

(c) Lib. 5. decad.

(d) De Antris Lethiferis, Art. 2.



like, be left exposed in the Night-time to the *Northerly Winds*, they are frequently found next Morning perfectly stiff and dead, in the same Posture as they are wont to be in at their Stalls and Cribs: And there are divers Accounts of Persons in those Countries, who have been so suddenly transfixed, stiffened, and killed by those *Blasts*, as to have continued on Horseback in the same Posture as when Living, till the Horse, acquainted with the Road, has brought them to their Journey's End: And the above-mentioned Physician (a) tells us, that when he was at *Brussels*, he was informed by a *Spanish* Captain, that of a Party of Horse that was sent out for Booty in a very cold Season, one by Accident lost the rest of the Body; and Riding about some time, before he could find his Way, or any Refreshment, he was so transfixed with the Cold as to be quite killed, but continued on Horseback in the Posture of a Live Person, until his Horse at last happened to find the Way back to his Quarters, whither his Company had before got, and missing him, feared he had fallen into the Enemies Hands; but when they

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came

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(a) Loco cit.



came to congratulate him upon his safe Return, they went so near as to speak to him, and take hold of him, before they perceived him to be dead.

TO *Blasts* of this kind it undoubtedly is, that Fruit Trees and Plants do so frequently suffer, especially after a warm early Spring, after the vegetable Juices have began to rise and shoot into Buds and Leaves. Instances of this Nature we frequently find in our own Country; and I have had Opportunity to observe, more than once, that upon such *Blasts*, the Trees have, on that Side towards the Wind, been in one Night's Time quite changed in the Colour of the Leaves; and some, of the most tender sort, almost stripped bare, their Leaves falling off dry, as in *Autumn*.

BUT there is something yet further, besides particular Constitutions of Air, that is taken Notice of by Physicians, as a general Cause of Maladies of this kind; and that is what is commonly called *Contagion*, or *Infection*; by this Term *Contagion*, is understood a Disease arising from the Contact of such Bodies or Particles as have in them a Power of Altering the due Crasis of a healthful Person,



Person, and inducing still one common Disease; these Particles are generally called by Physical Writers *μείσματα*, *Contagiosa*, or *Contagij Semina*; and the Difference of Pestilences arising from these Causes seems much to differ from what have been hitherto taken Notice of; as the former cannot be shunned but by quite leaving the diseased Climate, or by such a Strength, or Turn of Constitution, as resists, or yields not to the general Disorder; whereas in this last Case, a Person seems to be equally safe in any Air that is not impregnated with these contagious *Effluvia*, and the greatest Danger arises from the Nearness to diseased Persons, or whatsoever else is capable of harbouring those mischievous and secret Messengers, as the Poet (a) takes Notice.

*Quo propior quisq; est, servitq; fidelius agro  
In partem Lethi citius venit.——*

THE Histories of Physick abound with Relations of Pestilences from no other Cause than what arises from the Importation of the Disease, if it may be so termed, from distant

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(a) Ovid. Metam. lib. 7.



distant Countries; and sometimes not by Persons themselves distempered, but by the Conveyance of these *Pestilential Miasms* in their Cloaths or Wares imported in the Way of Trade. *Fracaſtorius*, (a) an eminent *Italian* Phyſician, tells us, That in the Year Fifteen Hundred and Eleven, when the *Germans* were in Poſſeſſion of *Verona*, there aroſe a deadly Diſeaſe amongſt the Soldiers from the Wearing only a Coat purchaſed for a ſmall Value; for it was obſerved, that every Owner of it ſoon ſickened and died; until, at laſt, the Cauſe was ſo manifeſtly from ſome Infection in the Coat, that it was ordered to be burned. Ten Thouſand Perſons, he ſays, were computed to fall by this Plague before it ceaſed.

FROM the ſame Cauſe, that is, infected Garments and Merchandize, *Mercurialis* takes Notice of a Plague in his Time at *Venice*; and *Appianus Alexandrinus* (b) aſſures us, that the *Celte*, after a Conqueſt over the *Illyrici*, and in Poſſeſſion of their Plunder, were infected with a grievous Plague, which the *Illyrici* then laboured under. *Thyſidides* alſo,

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(a) De morbis contag. lib. 2. cap. 7.

(b) De Bello Illyrico.



also, in his Relation of the Plague at *Athens*, intimates, That it was brought from some Part of *Ethiopia* by the like Means. And *Prosper Alpinus* (a), before mentioned, seems to lay the greatest Stress for the Frequency of the Plague at *Grand Cairo*, to the Traffick with those Countries as are hardly ever free from *Pestilential Diseases*. A great many Physicians have charged the Plague in Sixteen hundred and sixty three at *Amsterdam*, to the Infection of some *Pestilential Miasms* which were transported from *Smyrna* and *Algiers*, then much infected with such Diseases, with some Merchandize; by which Means likewise it was conjectured soon afterwards to reach *London*, and several other Parts of *England*, as it appears from the Account of Dr. *Hodges* (b). To this Purpose I remember to have read a strange Story, somewhere in *Baker's Chronicle*, of a great Rot amongst Sheep, which was not quite rooted out until about Fourteen Years Time, that was brought into *England* by a Sheep bought for its uncommon Largeness, in a Country then infected with the same Distemper: And upon this Account it is that the Prudence  
of

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(a) De Medic. Egypt.

(b) De Peste.



of those Nations and States are to be justified, who enjoin all Persons and Merchandize from infected Countries, to stay a certain Time upon their Coasts and Borders, before they are suffered to intermix with a healthful People; having by such Instances as here mentioned been justly alarmed at the Incroachment of such dreadful Destroyers.

THESE Historical Fragments are put together, in Order to apprise those Readers who have not been very conversant with Things of this Kind, with the various Ways by which the most dangerous Diseases, and even sudden Death, may be introduced into our Constitutions, by the Agency of very minute and unheeded Causes; and likewise the better to support the Distinction necessary to be made between *Epidemic* Diseases, and a *Contagion*; as well as to illustrate the Manner whereby the latter subsists, spreads, and proves fatal, when the Causes producing the former are absent.

*Epidemick* Diseases of all Kinds and Degrees of Exacerbation, have their Rise from some common Cause, that affects all within its Extent more or less, in Proportion to the particular Fitness of different Constitutions  
to



to be influenced by it: And by the *Bellinian* Doctrine we are taught, how all those Changes are made in the Blood, when thrown into a Fever, even from the most simple *Ephemera*, to the most complicated and malignant Cases whatsoever; to which therefore the Reader must be referred, for a clear Understanding of such Matters; it being sufficient to our Purpose here to observe, that he demonstrates all Fevers to be attended with some Fault in the Blood's Motion, Quantity, or Quality, or in some or all of them together; and that its chief Fault in Quality, (which is most to the present Case) consists in an unequable Fluidity, some Parts of it being rendered thinner, and others thicker at the same Time, than in a natural State; not unlike what happens to all coagulated Liquors.

FROM this Condition of Blood, this great and wonderful Man goes on to shew, through the whole Course of his Propositions, that the coagulated Part, which he commonly distinguishes by the Name of *Lentor*, does accumulate in the capillary Vessels until their Endeavours of Restitution, as in all Elastick Bodies, are greater than



than the protruding Force, when by the Arteries Re-action upon it, the *Lentor* is shook, dislodged, and washed away into the Veins, an ordinary Course of Circulation, there continuing its Progress till it is either fitted for some Secretion and Evacuation, or again lodged in the Capillaries, to bring on a new Paroxysm.

THIS unequable Fluxility of the Blood arises from two general Causes, either from such Means as diminish its Motion, or from the Mixture of such Particles, as cannot only of themselves be reduced by the digestive Powers into homogeneous Dispositions therewith; or as have a Faculty to put in Fusion some Parts of the Mass, and leave the other thicker than before; these are particularly enumerated, and their Ways of Operation distinctly demonstrated by *Bellini*.

CONFORMABLE to this Change in the Blood, which is the common Promptuary of all the other animal Fluids, every Thing separated from it hath some correspondent Affections; and the nervous Fluid in particular, which is separated from a Mass so unequally fluid, cannot but in it  
self



self have some Parts too fine, and others too gross, besides the Inequalities in the Times and Quantities of its Separation; from all which the same Author accounts for those Affections, termed nervous, which are the *Concomitants* of Fevers: And in the Prosecution hereof he frequently takes Occasion to speak of this Fluid to be thin, sharp, hot, fiery, dry, &c. as the saline and rigid Parts in its Composition are by the Distemper more or less subtilized, or more or less defrauded of its humid Parts by Exhalation.

FURTHERMORE, in this great Disorder of the Constitution, and inordinate Hurry and Colluctation of the Fluids, sometimes the Solids are maintained in their Contractions and Motions, until the Particles, either introduced from Abroad, or generated in the Body, which cannot be assimilated into homogeneous Qualities, are thrown out of the Course of Circulation by the natural Discharges, by Transpiration, or by Abscesses; and the animal Fluids restored to their natural State. But when Matters are brought to this pass, it happens that the very Means of saving one Person, may prove the Destruction of many others;



others; because what is thus critically thrown off by one, hath a Faculty of exciting the like Disorders in the Fluids of another, when it is insinuated into them; as a very small Quantity of some fermenting Substances will communicate its Efficacies a very great Way, and put very great Parcels of Fluid into the like Agitation. And this is the Way by which a malignant Fever comes to be infections, and a *Pestilence* changes into a *Contagion*; as *Bellini* more largely explains it in his *XXVIIIth Proposition* of Fevers; from the whole of which it is manifest, as Dr. *Mead* hath expressed it in his fifth *Essay of Poisons*, that *the Effects of the one are the Cause and Beginning of the other.*

TO bring then this nearer to the Matter under Examination, the Plague in 1665, and described by Dr. *Hodges*, was strictly and properly a *Contagion*; and by all Accounts of the best Authority, That which hath made such vast Devastations in some Parts of *France*, and now continues to rage amongst them, to the great Terror of their Neighbours, is also of the same Kind; and was brought to them in Merchandize, and by a Ship's Crew, who were sick of a pestilential



lential Disease all their Voyage Home from some Parts of *Turkey*; in neither of these there being any Manner of Fault chargeable upon the Air, or to any other Causes before enumerated in producing a *Pestilence*.

THE best Account of that Contagion now Abroad, we have from Three Physicians of Eminence, who were sent by the Duke Regent of *France* to *Marseilles*, both to give proper Directions in that Exigency, and report their Opinions for the Information of others: The Infected they divide into Five Classes, suitable to the different Aggravation of their Symptoms, and the different Methods they thereby require in their Cure.

THE First Class, observed especially in the first Period, and in the greatest Fury of the Distemper, contains such as were afflicted with the Symptoms that were constantly followed by a speedy Death. These were for the most Part irregular Shiverings, the Pulse low, soft, slow, quick, unequal, concentrated; a Heaviness in the Head so considerable, that the sick Person could scarce support it, appearing to be seized with a Stupidity and Confusion, like that of a drunken Person; the Sight fixed, dull, wandering,



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dering, expressing Fearfulness and Despair; the Voice flow, interrupted, complaining; the Tongue almost always white, towards the End dry, reddish, black, rough; the Face pale, Lead-coloured, languishing, cadaverous; a frequent Sickness at the Stomach; mortal Inquietudes; a general Sinking and Faintness; Distraction of the Mind; Dosing, an Inclination to vomit, Vomiting, &c. The Persons thus seized, perished commonly in the Space of some Hours, of a Night, of a Day, or of two or three at farthest, as by Faintness or Extinction; sometimes, but more rarely, in convulsive Motions, and a Sort of Trembling; no Eruption, Tumour or Spot appearing without.

IT is easy to judge by these Accidents that the Sick of this kind were not in a Condition to bear Bleeding; and even such, on whom it was tried, died a little while after. *Emeticks* and *Catharticks* were equally here useless, and often hurtful, in exhausting the Patient's Strength, by their fatal overworking. The *Cordials* and *Sudorificks* were the only Remedies to which they had recourse which nevertheless were of no Service, or at the most prolonged the last Moments but for a few Hours.



THE Second Class of the Diseased that they attended, during the Course of this fatal Sicknefs, contains fuch as at firft had the Shiverings, as the preceding, and the fame fort of Stupidity, and heavy Pain in the Head; but the Shiverings were followed by a Pulse quick, open, and bold, which nevertheless was loft upon preffing the Artery ever fo little. Thefe Sick felt inwardly a burning Heat, whilft the Heat without was moderate and temperate; the Thirft was great and inextinguifhable; the Tongue white, or of an obfcure red; the Voice hafty, flammering, impetuous; the Eyes reddifh, fixed, fparkling; the Colour of the Face was of a red fufficiently frefh, and fometimes inclining to livid; the Sicknefs at the Stomach was frequent, though much lefs than in thofe of the preceding Clafs; the Refpiration was frequent, laborious, or great and rare, without Coughing or Pain; Loathings; Vomitings, bilious, greenifh, blackifh, bloody; the Courses of the Belly of the fame Sort, but without any Tenfion or Pain; Ravings, or phrenetick *Deliria*; the Urine frequently natural, fometimes troubled, blackifh, whitifh, or bloody; the Sweat feldom fmelt badly, and was fo



far from giving Ease to the Sick, that it always weakned them; in certain Cases Hemorrhages, which, however moderate, proved always fatal; a great Decay in the Strength, and, above all, an Apprehension so strong of dying, that these poor Creatures were incapable of any Comfort, and looked on themselves, from the first Moment of their being attacked, as destined to certain Death. But that which deserves to be well observed, and which has always seemed to characterize and distinguish this Disease from all others, is, that almost all had at the Beginning, or in the Progress of this Distemper, very painful Buboës, situated commonly below the Groin, sometimes in the Groin or Arm-pits, or in the Parotide, Maxillar, or jugular Glands; as likewise Carbuncles, especially on the Arms, Legs or Thighs, small, white, livid, black Pustles, dispersed over all the Surface of the Body.

IT was very rare to see any of the diseased of this Second Class escape, though they supported themselves a little longer than those of the preceding; they perished almost all with the Marks of a gangren'd Inflammation, especially in the Brain and Thorax; and that which was most singular was, that  
the



the stronger, fatter, fuller, and more vigorous they were, the less they had to hope.

AS to the Remedies, they bore Bleeding no better than those of the First Class; at least if they were not blooded at the very first Instant of their being taken Sick, it was evidently hurtful to 'em; they grew pale, and fell even in the Time of their first Bleeding, or a little while after, into such Faintings, as could not in most of them be imputed to any Fear, Repugnance, or Distrust, since they demanded with Earnestness to have a Vein opened.

ALL *Emeticks*, excepting *Ipecacuanha*, were very often more hurtful than useful; causing such fatal Irritations and Excesses in operating, as could neither be moderated or stopped. The *Catharticks* that were a little strong and active, were attended with the same Inconveniencies. Such as they prescribed in the Form of a laxative Ptisan, as well as plentiful Draughts, that were diluting, nitrous, cooling, and gently alexiterial, gave some Relief, but did not hinder the Return of the Symptoms. All *Cordials* and *Sudorificks*, if they were not soft, gentle, and benign, did nothing but promote the



Progress of the inward Inflammations. In short, if any one escaped, which was very rare, he seem'd to owe his Cure to the external Eruptions, when they were very much rais'd; either solely by the Force of Nature, or by the Assistance of Remedies, as well internal as external, that determin'd the Blood to discharge on the Surface of the Body, the noxious Ferment wherewith it was infected.

THE Third Class contains the two preceding; for during the Course of the Sicknes, a great Number of Persons were attacked successively with the different Symptoms enumerated in the two former Classes, in such a manner, that the most Part of the Signs described in the Second, were commonly the Forerunners of those which were mentioned in the First; and the appearing of these latter Symptoms denounc'd an approaching Death. In these Sorts of Cases they varied their Method according to the Diversity of Indications, or of the most urgent Symptoms; so that without being oblig'd to enter into farther Particulars, a Judgment may be form'd of the Event of the Malady, and of the Suc-



Success of the Remedies, from what was before observed on the Subject of the diseased of the two preceding Classes.

THE Fourth Class contains the Diseased attacked with the same Symptoms with those of the Second, but these Sorts of Accidents lessened or disappeared the second or third Day of themselves, or in Consequence of the Effects of the internal Remedies, and at the same time in Proportion to the remarkable Eruption of the Buboës and Carbuncles in which the noxious Ferment that was dispersed through the whole Mass, seemed to be collected together; so that the Tumours rising from Day to Day, at length being open, and coming to a Suppuration, the Infected escaped the Danger that threatned them, provided they had some Assistance.

THE Fifth and Last Class contains all such infected Persons, as without perceiving any Emotion, or there appearing any Trouble or Hurt of their natural Function, have Buboës and Carbuncles, which rise by little and little, and easily turn to Suppuration, becoming sometimes schirrous, or which is



more rare, dissipate insensibly, without leaving any bad Effect behind them; so that without any Loss of Strength, and without changing their manner of Living, these infected Persons went about the Streets and publick Places, only using themselves a simple Plaster, or asking of the Physicians and Surgeons such Remedies as are necessary to these Sort of suppurating or schirrous Tumours.

AND thus we have a succinct View of the Sicknesh now in *France*, which is a *Pestilence* from *Contagion*: Because then there is such a vast Difference between a *Pestilence* arising from assignable Causes in the Air, &c. and a *Pestilence* from a *Contagion*; as to the preservative Means especially against them; and that what we are now in most Apprehension of, is of the latter Kind; it most concerns us to be well acquainted with the Manner of Infection, as far as we can reason about Agents so extreamly minute and subtle. How all other *Antecedents* to a *Pestilence* exert themselves in their Influences over the animal Oeconomy, *Bellini* has brought even to a Demonstration; tho' indeed as to a *Contagion* he is so very short, that we may venture to insert it here, as introductory to the following Remarks,

‘ A



‘ As this Coagulation and Fusion may go  
 ‘ on so far as to set at Liberty, and perspire  
 ‘ through the Surface of the Body, or with  
 ‘ the Breath in Respiration, many noxious  
 ‘ Particles, which may be so subtil and a-  
 ‘ ctive, as to enter the cutaneous Pores of  
 ‘ other Persons, or mix with that Air which  
 ‘ they draw in Respiration, and when got  
 ‘ into the Body, be able to make the same  
 ‘ Change in the Blood, both as to its Coa-  
 ‘ gulation and Fusion; hence it comes that  
 ‘ such a Fever proves *contagious*, which is  
 ‘ an inseparable Requisite to a *pestilential*  
 ‘ Fever.

‘ But this is not only thus brought about;  
 ‘ but also the dissolved, and dispersed Par-  
 ‘ ticles, may longer adhere to some inani-  
 ‘ mate Bodies than others, as to Woollen  
 ‘ and Linen Cloaths, Papers, &c. and these  
 ‘ Particles may, by the Steam of a living  
 ‘ Body, or by the Means of any other Heat,  
 ‘ be put into Motion, so as to breath out of  
 ‘ those Lodgments, where they quietly re-  
 ‘ sided, and obtain so much Liberty, and  
 ‘ Action on all sides, as will carry them into  
 ‘ the cutaneous Pores of any Persons within  
 ‘ their Reach, and infect them; and on this  
 ‘ Account a *Pestilence* may be brought from  
 ‘ very



‘ very distant Countries, lying a long Time  
‘ in such Manner concealed, and then sudden-  
‘ ly breaking out; with many other Cir-  
‘ cumstances of like Nature.

‘ B U T if these subtile and active Parti-  
‘ cles be of that Nature, that they can pe-  
‘ netrate the Pores of other Animals, and  
‘ occasion a like Coagulation of their Blood,  
‘ not only Men, but Brutes also, will be  
‘ seized with a *Pestilence*; but this does not  
‘ always very necessarily happen; because  
‘ the Blood of Animals is different from hu-  
‘ mane Blood, so that although these Par-  
‘ ticles are supposed to get into it, it does  
‘ not therefore necessarily follow that they  
‘ must vitiate it, any more than will *Aqua*  
‘ *Regia* dissolve all kinds of Metals; but  
‘ yet Brutes of all kinds, or some of them  
‘ only, will be seized equally with Men,  
‘ when this subtile and active Ferment,  
‘ which penetrates the Surface, is of that  
‘ Nature, as will taint the Blood of other  
‘ Animals with those *pestilential* Requisites.

‘ A S this kind of Contagion then can  
‘ easily proceed from an infected Person  
‘ at a great Distance, as often as the noxi-  
‘ ous Particles can reach another Person,  
‘ and



‘ and give that Degree of Coagulation and  
 ‘ Fusion, as is necessary to a *Pestilence*; the  
 ‘ more aggravated then will be this Calami-  
 ‘ ty, and more easily spread, when a health-  
 ‘ ful Person is near to one already infected;  
 ‘ and yet much more worse, if it is in Con-  
 ‘ tact with those Parts, which more plen-  
 ‘ tifully, and with a greater *Impetus*, breath  
 ‘ out infected Steams, as if the Air arising  
 ‘ from the Mouth and Lungs, which must  
 ‘ be extreamly hot, or the Perspiration of a  
 ‘ Carbuncle when it is greatly inflamed;  
 ‘ for in this Case the exhaling Particles  
 ‘ will be in their greatest Activity when  
 ‘ nearest the recipient Body, and likewise  
 ‘ more dense, that is, more numerous, and  
 ‘ consequently of greatest Efficacy.

‘ BUT it is not every one that is seized  
 ‘ with a *Pestilence* from Contagion, by Means  
 ‘ of Steams exhaling from any particular  
 ‘ Parts of the Body; but only when these  
 ‘ Steams, and the Air it self, hath joined  
 ‘ with, and interspersed through it Par-  
 ‘ ticles of vitiated Faculties; and then  
 ‘ this Kind of Fever will easily be communi-  
 ‘ cated, and necessarily ensue, not only on  
 ‘ Account of what gets into the Body with  
 ‘ the inspired Air, but becaule also the whole  
 ‘ Body



' Body is surrounded with such an Infection,  
 ' wherein the noxious Particles floating a-  
 ' bout on all Sides, will endeavour to pene-  
 ' trate through the Pores upon the Surface,  
 ' and get that Way into the Blood; for al-  
 ' though the Skin is thicker upon the Sur-  
 ' face of the Body, than that Pellicle cover-  
 ' ing the Vessels in the Lungs, and for that  
 ' Reason it requires longer Time for such  
 ' Particles to get that Way into the Blood,  
 ' and the Habit of the Body, yet it is no  
 ' Argument that they cannot get that Way  
 ' at all, and be admitted into the Juices.

BY this we are able to gather, that when  
 a Fever from some Faults in the *Non-naturals*,  
 comes to the highest Degree of Malignity,  
 it makes such a Change in the animal Fluids,  
 as renders some Parts of them poisonous, and  
 capable of exciting the like fermentative  
 Motions, wheresoever they come, into a pro-  
 per Subject, without any of those procata-  
 rctic Causes as gave Rise to the Fever of the  
 first Person seized.

OF what Nature then this Poison is, we  
 may conjecture from the Circumstances of  
 its Production. All animal Bodies do more  
 or less generate a Salt; or rather, in Pro-  
 portion



portion to the Strength of their digestive Powers, do they more or less subtilize the saline Particles which are taken in with their necessary Nourishment. This is abundantly manifest in the Distillation of many animal Substances, which plentifully yield a volatile Salt. But indeed in the Composition of this, in a natural and healthful State, there is joined a very subtilized Sulphur or Oil; which contempers and softens it into a Fitness for the Purposes of the OEconomy: And under this Modification, it becomes the Principle of Vitality, and the chief Instrument of animal Action; not unlike what this is conceived to be, is the common *Sal volatile oleosum*, or any other Spirits drawn from odorous Bodies.

IT matters not what Names Persons please to distinguish this by, in an humane Body; but that somewhat of this Kind is naturally the Produce of its digestive Powers, in the highest Degree of Comminution or Subtilization they are capable of bringing any Thing to, no one will question; and that those minute Threads or Fibres, of which the whole is a Composition, are animated by it; or, to speak more strictly, owe to it their Elasticity and motive Faculties.



IT is hoped, that no one who hath been accustomed to Reasonings of this Nature, will find any Difficulty in conceiving such a Difference of Principles, so finely blended together, as here suggested, of a saline, and an oleous, or humid Substance: And whosoever reads *Bellini*, or any others who have wrote in the same Manner, will find continual Regard had to those two Principles, even in the animal Spirits; for without it there can be no Notion had of what is so frequently mentioned, and which by their Effects we find must be true of them, that they are too dry, hot, active, fiery, and the like; or too humid, vapid, sluggish, viscid, &c. And it is further equally manifest, that in Proportion to the greater or lesser Degrees of Motion in those Fluids, from whence this subtile Composition is generated, and the Concussions of those fine Threads into which it is separated, will it err in one or other of the foregoing Extremes.

IN a Fever therefore, where the animal Fluids are in the highest Degree of Agitation, and from Causes too of a coagulating Nature, it ought to be no Wonder that even  
this



this subtile Union should be in some Measure dissolved, and the softer and more humid Parts broke and exhaled, so much as to leave the more rigid and saline ones not only unfit to lubricate those Elastick Threads, wherein they reside, but sharp and pointed enough to stimulate, contract, and harden them into all Loss of Motion.

AS the Destruction likewise of this *Nexus* in so subtile a Fluid leaves the saline Parts capable of injuring even that OEconomy which gave it Existence, so may its Volatility favour its Escape in a great Measure by Transpiration, so as to affect also other Persons within its Reach; and These, with all other Particles of like Nature, which by an Over-Agitation, and fermentative Motion of the animal Fluids, are separated from the softer and lubricating Compositions with which they were naturally joined, and which by their Volatility transpire and float in the Air, we take to be the true *contagious Miasmata*, that convey, propagate, and continue a *Pestilence*, after the Cause first raising it ceases.

NOR will this seem strange to any who are accustomed to reflect, how many Substances



stances are changeable into a poisonous Nature, which before were not only inoffensive, but useful to the Purposes of Life. Some Minerals, whose saline Parts in their Production are naturally blended with good Quantities of Sulphur, are harmless, and useful *Alterants*; but when by any Means those Principles are separated, the saline Parts become strong *Emeticks* and *Catharticks*, even to the Degree of a Poison. Who does not know that *Antimony* may be taken crude in large Quantities without any manifest Effect, but that the Chymist can take somewhat from it, that in few Grains shall operate beyond the Power of a strong Constitution to bear?

THOSE Arrows of Death therefore that make such dreadful Slaughter in a *Contagion*, are the animal Salts of infected Persons, set loose from their natural Combinations, and subtilized into the highest Degree of Volatility, by the Agitation and fermentative Motion of a Fever. And the Buboes, Carbuncles, &c. in a *Pestilence*, are nothing else but Collections of Particles, or Coalescences, formed in such irregular Motions, and thrown out of the Course of Circulation by those necessary Laws whereby  
every



every Thing is rejected, that cannot be assimilated into homogeneous and like Properties: The Matter of which Excretions is likewise of so subtile and fermenting a Nature, that if introduced into the Fluids of another well Person, it excites there the same Motion and Disorder.

THIS Change of animal Substances into a Poison, is too common a Truth to want any Attestation to those who have been but indifferently conversant in Natural Enquiries. And it is greatly to our Purpose, that even those Creatures, which are generally deemed poisonous, do require certain Degrees of Heat, and animal Action, to exalt their Juices to so high a Degree of Volatility, as to put on the Properties of a Poison, and act as such upon other living Creatures; in so much that it is not only a common Observation that these Animals lose their poisonous Nature when remov'd into Climes colder than what is natural to them, but that also they are not so venomous in their own Climates, at the cooler Seasons of the Year, as in the most sultry.

BUT the Case of a mad Dog entirely comes up to that of a *Contagion* from a Fever.



## 50 *The Causes and Cure*

This Animal, in the hotter Seasons of the Year, is subject to be thrown into a Fever; which Fever, for Want of such free Vent through the Pores of the Skin as in a Man, critically discharges a great deal of morbid Matter by the Glands about the Mouth, Lungs, and Parts leading thereunto: And it is very well known, that this Matter is of such a poisonous Nature that where by a Bite or a Wound otherwise made, it is infused into the Juices of other Creatures, it will excite in them the same kind of Distemper. But the Dog, before this Fever, had nothing of a poisonous Nature in him, and therefore the Venom generated by the Fever must be from such an Alteration made upon the animal Juices as changes them from a smooth, soft, and inoffensive, into a fiery, dry, stimulating Nature. So that there is nothing more happens in this Case to the Dog, than to a Man in the highest Degree of a malignant Fever. The same Cause in both generates a Poison where there was none before, only one is more naturally vented by the Glands about the Mouth, and the other by the whole Surface.



THIS Theory likewise might be further illustrated by many Instances from inanimated Fluids, which are capable of being put into Fermentation by a very small Portion of Matter, and which shall by such an Agitation from new Particles, or *Moleculæ* having Properties of communicating the same Effects to another quiescent Fluid; not much unlike what we see in the Communication and Propagation of Fire, which is excited and carried on in proper Subjects from the minutest Beginnings, and increasing also in its own Force as it spreads.

WHEN a Person therefore falls into a Fever from any epidemic, or other more private Cause, and that Fever rises to such a Degree of Malignity as is always supposed in a *Pestilence*, as far as any *Effluvia* do exhale from that Person, so far he may be said to have round him a contagious and poisonous *Atmosphere*; because there transpires from him such Particles as will excite in other Animals of like Constitution, the same fermentative Motions as those to which they owe their own Origin.

ALTHOUGH therefore, in the Beginning of epidemical Diseases, and during the



Subsistence of their common Causes, particular Regard is to be had to these Causes, and the Manner whereby they affect the People; yet when it is come to this pass, that the Fever it self is productive of a Poison, or somewhat intirely disagreeable, that communicates the same Impressions upon others, without any Concurrence of the first Cause, then such a Fever is truly a Pestilence by Contagion, and all precautionary Regards ought peculiarly to be suited, to prevent its Infection or Spreading; either by keeping the well Subjects clear from the Sick, or destroying the Influence of the poisonous Exhalations, or fortifying the sound against it. But to these Ends, it is necessary to have some tolerable Notion of the Manner how these secret Destroyers are continued, and conveyed to great Distances.

THE most common Manner of conveying and spreading a Contagion, observable in the preceding historical Collections, and which also is the Case of our present Apprehensions from Abroad, is by infected Persons and Merchandize; it being attested by too many Facts to admit of the least Doubt, that even Packs and Bails of Goods carry the poisonous *Miasmata* about with them; and



and from the Nature that we here suppose this Poisson to be of, nothing is more likely to preserve it than animal Substances, as Hair, Wool, Leather, Skins, &c. because the very Manner of its Production, and the Nature of its Origin, seems to give it a greater Affinity with such Substances than any other, and to dispose it to rest therein until by Warmth, Ventilation, or any other Means of Dislodgement, it is put into Motion, and raised again into the ambient Air.

TO know how these *Effluvia* come to have such fatal Influences over Mankind, and to understand their Progression from the first Seizure, to the End of that Distemper they gave Birth to, requires too many *Precognita* from the Mechanism of the animal OEconomy, and the Agency of such minute Instruments, to be particular about, in the Compass here limited. The Reader therefore must be satisfied with those short Hints here given, unless for more particular Information he pleases to turn to *Bellini* of *Fevers*, and *Dr. Mead* of *Poisons*, where he will find how the Blood, and all the Secretions therefrom, are affected and changed by such Causes.

WE shall here therefore only suggest some Thoughts concerning the Suddenness of their



Seizure, and their Energy of Operation. And this will not be difficult to conceive by those who are acquainted with that universal Property of Matter, whereby it is more or less determined to draw, and unite again, when separated into Parcels, according to the greater or lesser Affinities of their Figures, Solidities, and Quantities of Motion. As nothing therefore in Nature is supposed to bear a greater Similitude, than in this Case the natural animal Salts do with what hath been subtilized and set on Float in the Air, it can be no Wonder that when the Ambient is sated with the latter, they readily join with the former, as soon as they are received into the Body. And this is supported by the Authority even of *Bellini*, who allows, in the Beginning of his *XXVIIIth Proposition*, that the *Antecedents* to a pestilential Fever do sometimes vitiate the Spirits immediately in Quality.

AS the ordinary Course therefore of producing Fevers is by disordering the Blood first in Quality, with such Mixtures as coagulate it, that is, as make it unequally fluid, some Parts being thinner, and others thicker than natural; so by these extreamly subtle *Effluvia*, in a *Contagion*, the Spirits are destroyed  
in



in their natural Texture, and the more rigid and saline Parts, by a Combination with the venomous *Spicula*, changed into Dispositions destructive of that Constitution they were before destined to preserve. Whosoever then considers what must be the necessary Consequences of such an immediate Depravation and Change in that Fluid, which is an absolute Requisite to all animal Action, will not at all wonder at any of the Affections which are commonly enumerated as the *Concomitants* of a Contagion; and a tolerable Acquaintance with the OEconomy, by the Help especially of the Authors before referred too, on *Fevers* and *Poisons*, will enable any one to account severally for their Production.

THIS then being the Case of a *Contagion*, that a Person having a Fever, critically throws off poisonous *Effluvia*, which were generated during such irregular Motions of the animal Fluids, insomuch as to diffuse for some Distance round, what will infect other Persons within their Reach; and that so many have got this Infection, that no Part of the Air, for some Tract of the Country together, is free from them; the poisonous *Atmospheres*, if they may be so termed, of the infected,



extending and mixing into one universal, common *Contagion*; this, I say, being the Case here under Examination, why any at all survive, must be owing either to the Goodness of their Constitution, or to proper Means to defend against its Infection, or to conquer it when received; which naturally brings us to consider these two important Ends, of *Preservation* and *Cure*,

AS for the *First* of these, the common Experience, of meaner People being mostly carried off, admonishes all to live upon as nutritive and generous a Diet as can be procured; and such Things as not only yield due Nourishment, but Plenty of Spirits, and what easily perspires. For there are many Things of good Nourishment, that are not easily perspired; such as all light and viscid Substances, as Pork, Fish, and the like, which therefore are very apt to go into Fermentation, and generate Corruption; in short, whatever even the common People have Notions of, as apt to bring Surfeits, ought to be avoided, and such Means of Subsistence complied with, as generate a warm, rich Blood; and in Proportion to the Ways of Living at other times, should every one, except those who accustom themselves to Riot and Excess, indulge himself at a higher Rate,

ROAST.



R O A S T E D Meats are by all preferred to boiled ; and if Pickles and high Sauces are ever to be encouraged, it is on these Occasions ; and *Garlick, Shallot, Onions, &c.* are extremely serviceable, and preferable to the hot, dry, spicy Seasonings, because their pungent Volatility seems naturally covered with a Softness, or balsamick Quality, more agreeable to the Nature of animal Spirits. To which Purpose it is very remarkable, that in the Histories of many Pestilences, Notice is frequently taken of the Exemption of *Jews*, and People who deal much in such Fare, from Infection. And it is customary with some experienced Sailors, to lay in great Stores of such Things against their Arrival at infected, and unwholsome Countries,

T H E R E is also a very strict Regard to be had to the Firmness and Strength of the Solids, which is greatly assisted by moderate Exercises, but carefully avoiding too much, and every Thing that occasions too great an Expence of Spirits at a Time, and particularly by over-Warmth. But to this Purpose I cannot conceive any Thing more serviceable than frequent Immersion in  
cold



cold Water, so that the Times of staying in are as short as possible, the Good received hereby being chiefly in the first Shudder and Constriction; and it is particularly to be remembred, tho' Dr. *Hodges* hath omitted it in his Account, that Watermen, and others, whose Occasions imployed them much upon the River, and in the Cold, suffered least in the late Sickness. The Use of *Vinegar*, and other *Acids*, are also of Service for the like Intention.

AS to the Preservative Means, which the Government have power to provide, there is a Bill just now passed in Parliament, under the Direction of the best Judges in such Matters, and which seems to have omitted no human Methods to guard against the Approaches of such a dreadful Invader: Yet in the Course of an accidental Conversation a little time since, I met with somewhat suggested, which I cannot but presume, would very much conduce to this great End; and that is, such a Regulation of the common Bills of Mortality, as might very nearly ascertain the Disease, of which every Person dies; for as they are now ordered, there is nothing to be depended upon from them. And this is proposed to be done, not only in

*London,*



*London*, and other great Cities, but throughout the whole Kingdom, by obliging Physicians, Surgeons, Apothecaries, or any the most competent Judges, who attend upon the Sick, or can be informed of the State of the Disease, to give It in Writing to a proper Register, constituted for that purpose. Such a Method as this, if duly practised, seems not only very effectual to give timely notice of the approaches of any Pestilential or Contagious Distempers, but also to supply us with such Accounts of the Rise, Progress, Aggravations, and Remissions of other Diseases, as would be of very great Service to the Learned.

THERE may perhaps lie an Objection with some against this Practice, from the hazard it puts the Reputation and Memory of some Persons to, whose Cases will not well bear such Inquiry; but it is to be imagined, that so private an Inconvenience may not be made a bar to a very publick Benefit: Besides, ways may possibly be found to answer this main end, of knowing the Numbers carried off by certain Distempers, without exposing the particular Persons so dying.



AS to the great usefulness of a Regulation in the Bills of Mortality, every one may be very well apprised from the advantages made even from the wretched Account we are now supply'd with: And as to the Distemper under Consideration, in particular, we are able to trace in them its gradual Progress, Height and Declention; which therefore shall be here inserted, as extracted from the Bills of those calamitous Times.

*Anno 1664. Died of the Plague:*

From the 20th of <i>December</i> , to the 27 —	1
The following <i>Six Weeks</i> ———	0
From the 7th of <i>February</i> , to the 14th —	1
The following <i>Nine Weeks</i> ———	0

*Anno 1665.*

From the 18th of <i>April</i> , to the 25th —	2
The following <i>Week</i> ———	0
From the 2d of <i>May</i> , to the 9th —	9
From the 9th of <i>May</i> , to the 16th —	3
From the 16th of <i>May</i> , to the 23d —	14
From the 23d of <i>May</i> , to the 30th —	17
From the 30th of <i>May</i> , to the 6th of <i>June</i> —	43
From the 6th of <i>June</i> , to the 13th —	112
From the 13th of <i>June</i> , to the 20th —	168
From the 20th of <i>June</i> , to the 27th —	267

From



# of pestilential Diseases. 61

From the 27th of <i>June</i> , to the 4th of <i>July</i>	470
From the 4th <i>July</i> , to the 11th ———	725
From the 11th of <i>July</i> , to the 18th ———	1082
From the 18th of <i>July</i> , to the 25th ———	1843
From the 25th of <i>July</i> , to the 1st of <i>August</i> —————	2010
From the 1st of <i>August</i> , to the 8th ———	2817
From the 8th of <i>August</i> , to the 15th ———	3880
From the 15th of <i>August</i> , to the 22d ———	4237
From the 22d of <i>August</i> , to the 29th ———	6102
From the 29th of <i>August</i> , to the 5th of <i>September</i> ———	6988
From the 5th of <i>September</i> , to the 12th	6544
From the 12th of <i>September</i> , to the 19th	7165
From the 19th of <i>September</i> , to the 26th	5533
From the 26th of <i>September</i> , to the 3d of <i>October</i> ———	4929
From the 3d of <i>October</i> , to the 10th ———	4327
From the 10th of <i>October</i> , to the 17th	2665
From the 17th of <i>October</i> , to the 24th	1421
From the 24th of <i>October</i> , to the 31st	1031
From the 31st of <i>October</i> , to the 7th of <i>November</i> ———	1414
From the 7th of <i>November</i> , to the 14th	1050
From the 14th of <i>November</i> , to the 21st	652
From the 21st of <i>November</i> , to the 28th	333
From the 28th of <i>November</i> , to the 5th of <i>December</i> ———	210
From	



From the 5th of *December*, to the 12th 243

From the 12th of *December*, to the 19th 281

IT seems a Point yet in Dispute, whether great Fires at such a Time are of Service or hurtful, which to me is somewhat wonderful, because whosoever considers the Necessity for Air in Respiration, and by what Quality it becomes of such real Service to the Preservation of Life, cannot think such Fires proper, because they destroy that very Property in the Air; which is demonstrable by innumerable Experiments. As to the Diffipation indeed of pestilential Vapours, or their Destruction in any Manner, they undoubtedly may do Service, in some particular Circumstances. And what Fires common Occasions require at such Times, are rather to be made with such Substances as abound with, and yield a nitrous Salt, because that seems to be the chief Support of the vital Property in the Air, and such are our common Coals; for every one knows how much more all Wood-Fires are suffocating, and give a Languor, and Flatness to the Spirits.

PRESERVATIVE Fumigations are largely talked of by all, on these Occasions, and they with good Reason deserve to be practised,



practised, because while the Poison is on Float in the Air, it may undoubtedly be entangled so as to lose its Power of acting as such; but then for this Purpose such Things ought to be used as exhale very subtile Sulphurs, as the spicy Drugs and Gums. And on this Account I suspect Wood-Fires to be bad, because they raise into the Air a very gross and viscid Humidity, which is not only very unfit to lay hold on, and unite with, the extremely minute Agents that are to be provided against, but also carry into the Lungs with the Air in Respiration, such Particles, as dispose of themselves to Viscidities, and such Changes in the Blood, as are the Production of the worst Fevers, without any other co-operating Cause; for the Fire only forces out that Moisture, which, while a Tree, is in its Growth, naturally perspires from it; and how an Air so impregnated is like to be of Service against a Pestilence, any one may soon be a Judge, who considers those Kinds of Fevers which are most commonly epidemical in wood-land Countries.

SUCH Drugs however as are from a vegetable Production, and abound with subtile, volatile Parts, are of Service to be exhaled into the Air this way, both by their Fitness  
to



## 64      *The Uses and Cure*

to join with, and cover those venomous *Spicula* that are on float; and to mix with the Animal Fluids by Respiration and Infiltration into the Pores, whereby they convey, as it were, an *Antidote*, wheresoever the Poison is able to penetrate, and which grosser Vapours can by no means do.

O F this kind are chiefly *Storax*, *Benjamin*, *Frankincense*, and all the Aromatick Roots and Woods; and amongst them all, I cannot think the Smell of *Tar*, *Pitch*, &c. is inferior in any Respects, where its Scent is not particularly offensive. And these Things should be burnt at such Distances of Time from each other, that the Air may be always sensibly impregnated with them.

B U T as some have sad Apprehensions from the Air being still, and as it were stagnant at such Times, and not without good Reason, as it favours the Collection of poisonous *Effluvia*, and aggravates an Infection; for the Prevention of which, it is proposed at certain Intervals to fire off great Guns, and the like: I cannot but imagin, that for this End, it would be much more effectual to let off small Parcels of the common *Pulvis Fulminans*, in such Openings of a large Town, as  
Squares



Squares and Market-Places; for whosoever hath been accustomed to any Experiments with this Composition, must have perceived a much greater Shock given to the Air by its Explosion, than by the largest Pieces of Ordnance; insomuch that if any Objection can lie against the Practice of this in *London*, should there be Occasion, it is the crasie Condition of the City Buildings, which perhaps may not well stand its Shocks, were they to be made with good Quantities of it at a time.

THE Matter likewise of this Composition in some Measure bespeaks its Usefulness for these Purposes on other Accounts, besides its *Elastick* Force, because it diffuses into the Air great Quantities of that nitrous Salt, which is known to add much to its Serviceableness in Life: And whosoever considers how much cheaper this is to be procured, and how much easier practised, than the firing off Guns, especially in the Middle of great Towns, cannot but be desirous to try it, in Case of such Calamities as are now with too much Reason feared; it may not therefore be unacceptable to give its Composition here.



℞ *Sal. Nitri Partes ii. Sal. Tartari P. ij. Sulphuris P. j. optime misceantur in Mortario, parùm tepesfacto, & servetur ad usum vase bene obturato.*

THIS is order'd in a warm Mortar, and to be kept close, because the *Salt of Tartar* is apt to imbibe a Moisture from the Air, which hinders its Explosion. A Drachm or two put in as close a Heap as possible upon an Iron Plate over any Fire, will in a little Time go off with a Report and Concussion beyond that of any Gun whatsoever; so that in a calm Season, and an infected Air, great Services may undoubtedly be had from its frequent Practice.

YET besides the Helps for this End from common Diet, and Way of Living, Assistances may also be had from Medicinal Preservatives, such as those commonly termed *Aridotes*, consisting of spicy volatile Particles which afford a natural *Pabulum* to the animal Spirits, and by carrying into the whole Habit a fine subtle Oil, the better secure them against those Contagious *Spicula* which are in Readiness to mix with them; and for this Purpose we are furnished with a most elegant and useful Medicine, since many Authors of Not  
hav



have wrote on this Subject, which is the *Sal Volatile Oleosum*, if it be well loaded with the essential Oils of Spicy Ingredients; although indeed with some Constitutions more fetid Compositions are very suitable; but they all agree in carrying into the Habit somewhat that both recruits, and guards the Spirits against any foreign Mixture, or from unnatural Separations of their saline and humid Parts. And to the same End, in robust Constitutions, who have been accustomed to fare hard, the Spirit or Oil of *Turpentine* frequently drank in small Doses might be a great Means to preserve the poorer Sort from Infection.

As to the curative Part in such a terrible Visitation, it cannot be expected that Rules can be given suitable to every one's Case but by such as attend upon them; and the most that can be in general laid down to this Purpose, may be collected from the preceding Treatise of Dr. *Hodges*. Although as to the Choice of *Alexipharmicks*, they are certainly best that are most subtile, and capable of being carried, by the Course of Circulation, into the finest Recesses of the Constitution, whereinto it is manifest the extream Subtlety of the pestilential Poison is capable to enter: And amongst all of this Class, I take *Camphire*



## 68      *The Causes and Cure*

to be much the more preferable; which therefore I would propose not only to be repeated in proper Doses to an infected Person, till due *Crisis* is obtained, but also now and then given to those who are well, by way of Prevention. And because some Persons will be pleased with some general *Formula* to these Purposes, the following are offered to be complied with, or varied, at every one's Discretion, who is a Judge of such Matters.

℞ *Conserv. Ruta, Flor. Rorismar. ana* ʒj. *Species diambra sine odoratis* ʒj. *Balsam. è Mecha* ʒss. *pulv. Croci angl.* ʒj. *Syr. Balsam. q. s. ut f. Electuarium, cujus sum. quantitatem N. M. omni mane, & horâ somni superbibendo Haustulum Vini albi Lisbonensis, vel Hispanici, tepefacti.*  
To the Night Dose of this, may be added sometimes 2 or 3 Grains of *Camphire*, especially if a Person feels any Indisposition that requires a breathing Sweat; some may perhaps like the following better.

℞ *Conf. Ruta* ʒj. *Mithrid.* ʒss. *Pulv. Fol. Scordij* ʒj. *rad. Contrayerv. Serpentarij Virgin. ana* ʒss. *Sal. volat. Viperar. Croci angl. ana* ʒj. *Syr. Balsam. q. s. ut f. Elect. sumend. eodem modo.*

Or,



Or,

℞ Confect. Tracastorij sine Melle, Mithrid.  
ana ʒ ss. Boli veri, Terræ Japon. ana ʒ j. Castor.  
Salis succin. Croci angl. ana ʒ j. Confect. Alkerm.  
sine odoratis q. s. ut F. Electuarium ad usum præ-  
dictum, precipue h. somni.

SINCE the former Impression, I have received from a Friend, who is both very inquisitive and communicative in these Matters, the two following Prescriptions of one Johnson, a Surgeon of Note and Eminence, who had great Experience in pestilential Distempers, during a long Residence at Tangier, in the Reign of King Charles II. The first of them is under the Title of *Electuarium Cardiacum*, as follows :

℞ Rad. serp. Virg. Piper. long. Valerian.  
Angel. Hisp. Zedoar. Z. Z. ana ʒ j. ss. Petafit.  
Imperat. Cortic. Cinnam. Aurant. Sapass. Bacc.  
Lauri Myrrh. fol. Ruta Scord. Calaminth. Schæ-  
nath. ana ʒ j. Rad. Contrayer. Croc. Angel.  
Cochin. ana ʒ ss. Pulv. Vip. ʒ ij. Camph. ʒ ij.  
cum melle Trip. quant. specier. & vin. canarin.  
q. s. f. Elect.



WITH this the Author reports to have done very great Service Abroad, in Fevers of the worst kind, and those deemed in the highest Degree pestilential. The following also he used in like Intentions with very good Success, especially where the Patient was threatned with Fluxes :

*R. Ter. Japon. Bol. Ver. Cinnam. Menth. Scord. Gum Arab. ana ʒj. fs. Rad. Torment. quinquefol. Piemont. Cort. Aurant. Gland. Querc. Sang. Dracon. Z. Z. ana ʒj. cum Syrupō de mecon. q. s. F. Elect.*

THE same Mr. Johnson, who hath since practised in London with good Reputation and Success, published in a little Tract, that perhaps few have met with, some general Medicines for the same Purposes, which are thought to be worth Insertion here.

*An Alexipharmick Water.*

*R. Rad. Angelica, Contrayerva, Serpentaria, Virginia, Zedoaria, Cort. Cinnamomi ana ʒvj. Cort. exter. aurantior. Citri, limon, witerian, pimenti*



*pimenti vel piperts Jamaica, rad. gentiana, Z. Z. ana ʒ iiij. Garybil. macis, nucis, moshata, sem. Cardamomi, Cardui, Carui, Cubebar. Bac. Junip. lauri ana ʒ iiij. Cochenela, Croci Britan. Troch. de Viperis ana ʒ ij. fol. angelica, Cardui, Benedicti, dictamni Cret. galega, majorana, melissa, mentha, pulegii, ana m. ij. flor. anthos, Calendula, Centauri min. lavendula, ana m. j. Camphora ʒ ss. mithridatii, ther. Andromachi ana lib. ij. Contundenda Contundantur, & cum aqua Cardui benedicti, spirit. Vini rect. & Vini Canar. ana lib. xij. aceti flor. tunica, suc. acetosa, limon. ana lib. ij. in vas idoneum immitantur bene obturatum, ut per duas hebdomadas insolentur, vel in hypocausto, vel B. M. macerentur: tum demum per Alembicum distillantur; & hinc inter distillandum paretur Extractum, asservandum sub nomine Extracti Alexipharmaci.*

THIS Water is the best I have met with for the Agreement of the several Ingredients in the same Intention; as also is the following a most efficacious Anodyne and Sudorifick.



*An Anodyne Tincture.*

℞ Spirit. vini Tartarificati lib. x. Opii Theb. lib. ss. pul. Castorei, Cochenela, Croci, Garyophil. nucis moschatae, zedoaria, rad. serpentariae Virginiae, Camphora ana ℥ ij. sulphuris vitrioli ℥ j. misce, ac insolentur aut hypocausti, aut Balnei calore digerantur vase vitreo, subere & vesica clauso, bis terve indies agitando: fiat expressio, & Tinctura per residentiam depurata, servetur ad usum.

H E also recommends a very warm *Diaphoretic Extract* in the following Manner:

℞ Opii Theb. lib. ij. fiat Tinctura cum Aceto distillato primum, deinde cum spirit. vini rect. parata; tum demum in ol. Tartar. per deliq. lib. ij. dissolvatur; solutum percoletur, postquam evaporatione factâ ad tepidum Balnei calorem, in formam Extracti coaguletur. Tam 4 sal. volat. salis Armoniaci, C. C. Cranii humani, succini, Tartari, viperarum ana ℥ ij. Extract. Castorei Contrayerva, Croci, gentiana, serpentana, Virginia, spice nardi per vini spiritum ana ℥ iiij. pul. Bezoar. Orientis, Bezoar. mineralis, Bezoar. solaris, Camphora, Cochenela, Coral. rub. margaritarum ana ℥ iiij. suc. Kermes, Mithridatii, Theriac.



*Theriac. Androm. ana lib. fs. ol. macis per express. Bals. de Gilead. ana ʒ j. fs. ol. Chymic. Absinthii Cinamomi, Caryophil. limon. juniperi, majorane, rorismar. sassaphras ana ʒ fs. affatim misceantur, & vase idoneo optimè clauso digerantur, & usui Extractum reponatur.*

THE following Powder is also given for the same Purpose, which altho' somewhat elaborate, and troublesome in its Preparation, yet seems very well to deserve Recommendation.

*An Antipestilential Powder.*

*Rx Antimonii per longas venas scintillantis, salis communis, salis Tartari, ana partes aequales. Antimonium seorsim teratur, & additis ceteris, simul redigantur omnia in pulverem: pulvis iste sensim, seu partitis vicibus, cum cochleari vel alio quovis instrumento commodo immittantur in crucibulum candens; & cum universa fuerit deflagratio, ac stridor cessaverit, ab igne amoveatur, ut quamprimum refrigescat: tandem confracto vase, a scoriis liberetur, & in pulverem reducatur. Pulvis quinam multiplice ablutione in aqua tepenti pura edulcorandus, lento calore exsiccandus, & ad usum reponendus. Tum ʒ hujus pulveris lib. fs. cochenelæ, croci Britan. sal. volat. salis Armoniaci C. C. ana*



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*ana ʒ j. Bezoar. mineralis ʒ fs. Bezar. orient. ʒ ij.  
Camphoræ ʒ j. misce, fiat pul. subtilissimus.*

FOR those who seem to think these warm *Alexipharmicks* liable to overheat, or rarifie the Blood, and in Cases where such an Excess bespeaks Restraint, the same experienced Person recommends the following:

*R Spirit. Nitri rectificati, spirit. salis, ol. sulphuris per Campanam, ol. vitrioli ana lib. fs. spirit. vini rect. lib. iiij. misce, fiat per sex septimanas digestio in vase optimè clauso, facta agitatione frequenti, postea distillantur per B. M. in vase vitreo.*

I think it not possible to do any Service, by particular Directions for the Use of such Medicines as these, to every one who may be taken sick; because the Variety of Circumstances in the same Distemper will always require the immediate Government of competent Judges: most of these therefore are here published rather for the Remembrances of such, than for the Encouragement of unskilful Persons to risque their Lives upon their own Management.

BESIDES



BESIDES the use of these, under the Direction of those who are proper Judges, either for Prevention, or Cure ; some Security may possibly be had from odoriferous Substances to smell to, especially at a Time of conversing with the infected ; for which Purpose, I know of nothing so grateful and efficacious, as the *Volatile Sal Armoniac*, well impregnated with the essential Oils of Aromatick Ingredients ; and as it is to be procured dry, to be kept in small Bottles, from a careful Distillation of the common *Sal Volatile Oleosum*. But if in any Cases more fetid Substances are preferable, Compositions may be easily made of such from *Rue*, *Featherfew*, *Galbanum*, *Assa-fetida*, and the like ; for these, with some Persons, agree better than more grateful Scents ; besides, in sultry Seasons of the Year, and where Refrigeration is rather wanted, assistances may perhaps be better had from acid and cooling Flavours, such as are afforded by many Herbs, Flowers and Fruits.

FREQUENTLY to dissolve in the Mouth the following *Lozenges*, or something like them, I also imagine may be of Service ; especially to those who are conversant in infected Places.



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*R. Boli veri opt. ʒ j. Terre Japon. ʒ ij. Coral. rub. Margarit. opt. levigat. Flor. Benz. ana ʒ j. Is. ol. Cinnam. gut. xij. Sacchar. albif. lib. j. Mucelag. Gum. Tragacanth. in aq. Rosar. Dam. q. s. form. in Troch. ad usum prædictum.* For those who like it, may be added some *Ambergrease*; enough to give a light Scent of it.

PRESERVATORY Evacuations of all kinds are much disputed in these Cases, and not worth our particular Regard in this Place; for thus much is plain to all who are competent Judges in such Matters, that but very few Circumstances can justify them; because every Evacuation, unless that of Perspiration, gives more Liberty for any Thing noxious without, to insinuate into the Pores, as there is made thereby less Resistance to its Admission; not to say any Thing of the Danger in such a Practice, by lessening at the same Time the Quantities of Spirits and Strength, which cannot but be mischievous: And particularly ought all Persons at such Times to avoid too lax a Temper of Body; for which Purpose, these preservatory Means just hinted at, mostly tend to astringe the Bowels, and increase Perspiration.