

The history of the inoculation of the small-pox in Great Britain; comprehending a review of all the publications on the subject: with an experimental inquiry into the relative advantages of every measure which has been deemed necessary in the process of inoculation / By William Woodville ... In two volumes.

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Vol. 1

















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WILLIAM WOODVILLE, M.D. F.R.S.

Author of Medical Botany; &c.

THE
HISTORY
OF THE
INOCULATION
OF THE
SMALL-POX,
IN
GREAT BRITAIN;

COMPREHENDING
A REVIEW OF ALL THE PUBLICATIONS ON THE SUBJECT:
WITH AN
EXPERIMENTAL INQUIRY
INTO THE RELATIVE ADVANTAGES OF EVERY MEASURE
WHICH HAS BEEN DEEMED NECESSARY
IN THE PROCESS OF INOCULATION.

BY WILLIAM WOODVILLE, M. D.

PHYSICIAN TO THE SMALL-POX AND INOCULATION HOSPITALS.

*Et si in tanta scriptorum turba mea fama in obscuro sit, nobilitate ac
magnitudine eorum, meo qui nomini officient, me consolor.*

Liv. Praef.

IN TWO VOLUMES.

VOL. I.

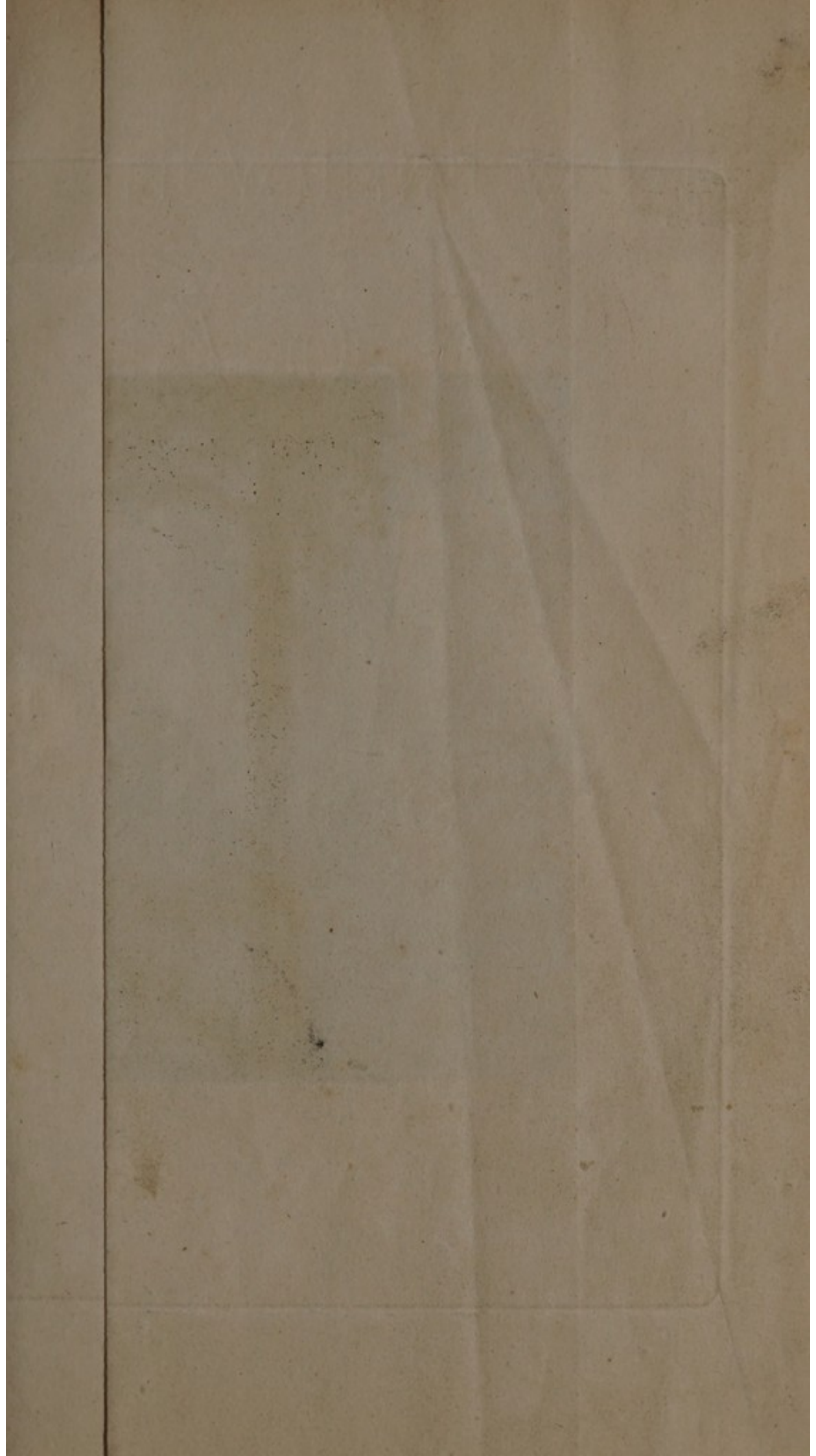
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1796.





TO THE

KING'S MOST EXCELLENT MAJESTY,
P A T R O N;

TO THE

MOST NOBLE FRANCIS, DUKE OF LEEDS,
P R E S I D E N T;

AND TO THE

V I C E - P R E S I D E N T S A N D G O V E R N O R S

OF THE

SMALL-POX AND THE INOCULATION HOSPITALS;

THIS WORK

IS, WITH THE UTMOST RESPECT, INSCRIBED.

KING'S MOST EXCELLENT MAJESTY,

R. N. V. R. O. M.

MOST NOBLE PRINCE, DUKE OF LEBES,

R. R. E. S. I. D. E. N. T.

THE UNIVERSITY OF GOTTINGEN

SMALLER AND THE COLLECTION OF THE

THIS WORK

IS WITH THE MOST RESPECT INSCRIBED.

P R E F A C E.

THE person who was first inoculated for the Small-pox in London, has not yet been dead two years: inoculation must therefore be considered as a modern art in this country; it has, notwithstanding, been so much improved, that it now rarely fails of success; though for that very reason, an unfavourable event, when it does occur, is more noticed, and proves a greater disappointment to the parties interested. That practitioners should always be able to avert such disasters, cannot reasonably be expected: to suppose, however, that unsuccessful cases must ever recur in the same proportionate number as at the present time, is to admit, that inoculation has already attained its utmost state of perfection. It is

true that, during the last thirty years, the art has been very generally practised, and also repeatedly investigated by men of acknowledged abilities and experience : but this affords no evidence that it has thereby received all the improvements of which it is capable. On the contrary, those most conversant with inoculation, know there are several points relating to it of the utmost practical importance that are not yet satisfactorily determined ; and that the established process will, in certain cases, not only fail of success, but evidently produce the disease in an aggravated state.

These remarks are not made with a view to depreciate the merit of the author of "*The present method of inoculating for the Small-pox ;*" whose works are well entitled to public thanks ; and will be a lasting monument of his judgment, discrimination, and candour. But we are to consider that the improvements in the
practice

practice have been wholly derived from experience; and it is by experience alone that we can hope to make a further progress, especially while we remain ignorant why the Small-pox, produced by inoculation, should appear, independently of medicine and regimen, under a milder form than when it is the consequence of casual infection. It seems evident this circumstance is not owing to any peculiarity in the Small-pox, since the measles, and even the plague itself, as far as can be judged from the trials which have been made, become milder diseases when excited by inoculation, than when received through the medium of the air.

How far my own researches and observations have thrown any additional light on the subject of inoculation, must be left to the future judgment of my readers. The inquiry mentioned in the title page is not yet fully

prepared for the press; and as it involves numerous facts and experiments, a considerable time will be required before it can be properly submitted to the public.

In the present volume I have endeavoured to make the reader acquainted with all * that has been written respecting the practice of inoculation, and more particularly with such occurrences and observations as seemed successively instrumental towards its improvement. From a desire of executing this part of the work with fidelity and impartiality, I have thought it right, that each author should be judged of by his own words; a plan which may have occasionally led me into repetitions; but which seemed indispensable, as I wished to avoid the still greater fault of misrepresentation.

* It is to be understood, that I here speak of the practice of inoculation in Britain.—With several scarce books I have been obligingly supplied by Dr. Sims, the learned President of the Medical Society of London.

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INTRODUCTION.

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INTRODUCTION.

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*Concerning the Origin and Antiquity of the
Small-Pox.*

HAD all the various diseases in every
part of the world been faithfully defined,
and their first appearances been recorded in
chronological order, from the remotest ages
to the present, it would be discovered, that
many were peculiar to certain times, as well as
to certain places; and that some have entirely
disappeared, or become extinct, while others

have continued inveterate, and with renewed virulence, through a series of centuries, have spread devastation and death among mankind. Under the latter description the Small-pox may be classed with peculiar propriety; and this distemper, as well as the measles, and some others known to be produced by a matter *sui generis*, or a specific contagion, seems to have originated from causes so perfectly incomprehensible, as to set at defiance all rational conjecture. It is true that several ingenious and learned authors^a have attempted to assign causes from which the variolous infection might derive its original source; yet surely the idea of ascribing it to any perceptible

^a Hillary speaks of the Small-pox and Measles as “first hatched and bred in, and *properly indigenous* to, Arabia, and most probably its more southern parts.”—Mead thinks they were “originally bred in Africa, and more especially in *Æthiopia, as the heat is excessive there.*”

state of the air, climate, &c. is highly visionary and chimerical.^b

It has not been discovered that any thing but variolous matter, under some modification or other, has the power of generating the Small-pox; nor does it appear how any combination of other contagions, or the concurrence of any circumstances whatever within the scope of human knowledge, can give rise to a new and determinate disease, uniform in

^b To impute the origin of the venereal distemper to such like sources, would now be deemed utterly absurd; yet a little reflection must show, that it is not less so in regard to the Small-pox. It has been conjectured, that the Small-pox might have been derived from some disease of brute animals: and if it be true, that the mange affecting dogs can communicate a species of itch to man; or that a person having received a certain disorder from handling the teats of cows, is thereby rendered insensible to variolous infection ever afterwards, as some have asserted, then indeed this conjecture is not improbable. But in the various attempts which I have made to communicate the Small-pox to different animals, as dogs, rabbits, poultry, &c. both by the ordinary way of inoculation, and by injecting variolous matter into the veins, no disease was produced.

its characters, and capable of reproducing itself in regular succession, and with unimpaired force from century to century.

The ancient Greeks and Romans have described the diseases known to them in a manner sufficiently circumstantial to be recognized at this day. From their silence^c therefore respecting a disease so very fatal and so peculiarly characteristic as the Small-pox is, we may justly conclude, that its date is subsequent to their times, and that consequently the world existed several thousand years before it was visited with this dreadful pestilence.

^c The simple names, ἐξανθήματα, φλυκταίναι, ἐπιουκίδες, εκθυμάται, ἄνθραξ, &c. never can be supposed to mean Small-pox. And though the learned John Goth. Hahn, in his *Variolarum Antiquitates*, published in 1733, contends, that the ἄνθρακες of Hippocrates, are the variolæ of modern physicians, yet his arguments in favour of the great antiquity of the Small-pox do not seem to have produced one convert. On the contrary, they were very judiciously refuted by Werlhoff, in the year 1735: and the Arabians are now universally allowed to be the first writers who mention this disease.

The first medical account of the Small-pox is given by the Arabian physicians, in whose writings the existence of the disease cannot be traced further back than to the siege or conquest of Alexandria, which took place about the year of Christ 640.

Rhazes,^d an Arabian physician, who practised at Bagdad in the beginning of the tenth century, is among the oldest, and is indeed the principal writer on the Small-pox, whose works are still extant: on this subject, however, he quotes several of his predecessors, of whom the most ancient is Ahron, who, according to Abulpharagius, was a priest and physician at Alexandria, when that city was besieged by the Saracens.^e Therefore

Ahron's

^d Called by Abulpharagius Mohammed Ebn Zacharia al Razi; and said to have died in the year 930.—Dyn. p. 191. Ed. Pocock.

^e Hareth Ebn Calda medicus Arabum, &c. medicinam exercuit in Perfide, ubi multas congeffit opes—Juffit Mohammed, fiquis

Ahron's book, in which the Small-pox was noticed, has been deemed the earliest known record of this disease; and its introduction at that time into Egypt, might have been by the armies of Amrou, which in the kaliphate of Omar poured in thither from Arabia.

Conformably with this opinion, Dr. Freind, who has prosecuted this inquiry with much industry and erudition, says, "By the earliest account we have of the Small-pox, we find that it first appeared in Egypt in the time of Omar, successor to Mahomet; though no doubt, since the Greeks knew nothing of it, the Arabians brought it out of their own country, and might derive it originally from

morbo affectus esset ipsum adire & ab eo remedium petere.

Hoc tempore inclaruit Ahron sacerdos Alexandrinus: Syntagma ipse in arte medica apud nos Syriace reperitur, triginta constant tractatibus, quibus duos anos addidit Sergius.—Abul Phar, Dyn. Ed. Pocock, p. 99.

some

some of the more distant regions of the East.”^f

But it appears, that the opinion here adduced of this learned physician is contradictory to that delivered by him some time before; for in a letter, addressed to Dr. Mead, he has said, “as far as can be learned from ancient records, the Small-pox probably first originated in Egypt, Aaron’s country, where the plague frequently began, and from thence it was easily spread among the Arabians, upon Amrou taking Alexandria from the Greeks.”^g

It may be presumed, therefore, that Dr. Freind was led to adopt the opinion, that the

^f See Freind’s History of Medicine.

^g “Ita ut in Ægypto fortasse, Aaronis patria, eademque Pestilentia procreatrice haud infrequenti, prima, quantum ex monumentis suspicari licet, exordia habuerit Variolarum morbus: qui deinde, Alexandria ab Amruo capta, Græcisque erepta, inter Arabum nationem facile diffusus est.”—Epistola de purgantibus, Hist. viii.

Arabians originally derived the Small-pox from the more distant regions of the East, by some new information on the subject; and this might have been done by the letters of Pere D'Entrecolles. For in one of the letters of this missionary jesuit, at Peking, addressed to Duhalde,^h he observes, that on looking over some Chinese books, he found the physicians speak of the Small-pox as a disease known in very ancient times; and that, notwithstanding Hippocrates and Galen have taken no notice of it, there can be

^h The words are, " En parcourant quelques livres Chinois sur cette matiere, j'ai remarqué que nos medecins parlent de la petite vérole, comme d'une espèce de maladie connue dès les premiers temps. Ainsi malgré le silence d'Hippocrate & de Galien, on ne peut pas douter de son ancienneté."—*Lettres edifiantes et curieuses. tom. 21. p. 33. ed. 1781.*

The above was written in the same year in which Dr. Freind's second volume of the History of Medicine was published, viz. in 1726.

no doubt of its existence there in the most remote ages.

Mr. Holwell, a surgeon, who resided many years at Bengal, observing that later times and discoveries have fully verified Dr. Freind's conjecture, has also said, that "at the period in which the Aughtorrah Bhade scriptures of the Gentoos, were promulged (according to the Bramins three thousand three hundred and sixty-six years ago) this disease must then have been of some standing; as those scriptures institute a form of divine worship, with poojahs or offerings, to a female divinity, stiled by the common people Gootee ka Tagooran, the Goddes of Spots, whose aid and patronage are invoked during the continuance of the Small-pox season; also in the measles, and every cutaneous eruption that is in the smallest degree epidemical. Due weight being given to this circumstance, the

the long duration of the disease in Hindoostan, will manifestly appear; and we may add to the sagacious conjecture just quoted, that not only the Arabians, but the Egyptians also, by their early commerce with India, through the Red Sea and Gulph of Mocha, most certainly derived originally the Small-pox (and probably the measles likewise), from that country where those diseases have reigned from the earliest known times.ⁱ”

These authorities have been cited literally, in order that the reader may judge more correctly on what circumstances the supposed great antiquity of the Small-pox in India is founded: and on deciding upon them, it is to be considered, that D'Entrecolles has adduced no direct fact to show that the disease was really described by the Chinese physicians at the early period he speaks of; neither are

ⁱ *An Account of the Manner of Inoculating the Small-pox in the East Indies*, p. 7.

Mr. Holwell's reasons by any means conclusive, not only as founded on the verity of the Hindoo chronology; but because the Goddess of Spots, or *Gootée ka Tagooran* was not supposed to preside over any peculiar eruptive disorder, but over all cutaneous affections that were epidemical. Besides, had the Small-pox existed in India more than three thousand three hundred and sixty-six years, it could not fail to have been transported in early times both to the Greeks and Romans, by the constant intercourse which they indirectly maintained with the Indian nations.^k

Dr. Mead

^h The Empire of Darius extended over a considerable part of India; and Alexander invaded it with an army of 120,000 men, and a fleet of nearly 2000 vessels, on board of which one-third of the troops embarked, and sailed down the Indus to the Ocean, while the remainder of the army, marching in two divisions, one on the right and the other on the left of the river, accompanied them in this voyage of nine months duration. After accomplishing this arduous undertaking, the conqueror of Asia led his army back by land to Persia. When in this expedition the various movements of the troops, the number
of

Dr. Mead supposes, that the Small-pox was originally bred in Africa, especially where the heat is excessive, as in Ethiopia, whence it was communicated to Arabia, and thence to Egypt. To show that this disease was known

of cities they took, and the different states which they subdued, are considered, it cannot be doubted that the Greeks could be strangers to the effects of variolous contagion, if it had at that time existed among the Indians. The Romans, through the medium of Alexandria, were indebted to the East for a considerable part of their luxuries, as silk, china, pearls, &c. and the Emperor Marcus Antoninus, to establish a more secure intercourse between these two distant countries, actually sent an embassy to the Emperor of China. These and many other proofs of intercourse between the eastern and western nations, which are amply stated in Dr. Robertson's Historical Disquisitions concerning the knowledge which the ancients had of India, render it highly probable, that a distemper so actively contagious as the Small-pox, could not have long existed in that country without spreading into Greece and Rome. It is therefore not an improbable supposition, that this disease was introduced into India by the Arabians, either soon after the conquest of Alexandria, or at a later period, with the trade carried on from the Persian Gulph to China, and the intermediate countries. For it appears, that before the year 851 the Mahometans became so numerous in the city of Canton, that the reigning Emperor permitted them to have a Cadi or Judge of their own sect. See *Robertson, l. c. 410. p. 95.*

long

long before the conquest of Alexandria, he states the authority of Dr. John James Reiske, who says, that in an old Arabic M.S. preserved in the public library at Leyden, he read the following words:—"In this year the Small-pox and measles made their first appearance in Arabia."

By this year¹ is to be understood that of the birth of Mahomet; and in confirmation of this another evidence, affecting the same chronology, shall now be adduced.

Among the curious and interesting information, lately published by Mr. Bruce, it appears from some Arabian annals, procured by this adventurous traveller, that the era of the first appearance of the Small-pox in Arabia attaches to that of the siege of Mecca.

In the account of this siege, as given by El. Hameefy, an Arabian author, and related

¹ Hoc demum anno comparuerunt primum in terris Arabum variolæ & morbilli.—*Disp. inaug. Lugd. Bat.* 1746.

by Mr. Bruce, it is said, that Abreha, who commanded the expedition against Mecca, “ had now refreshed his army, when there appeared coming from the sea a flock of birds, called Ababil, having faces like lions, and each of them in his claws holding a small stone like a pea, which they let fall upon Abreha’s army, so that they were all destroyed.” In the conclusion, he, (Hameefy) says, “ it was at this time that the Small-pox and measles first broke out in Arabia, and almost totally destroyed the army of Abreha.” “ But,” says Mr. Bruce, “ if the stone, as big as a pea, thrown by the Ababil, had killed Abreha’s army to the last man, it does not appear how any of them could die afterward, either by the Small-pox or measles.”^m

This remark, however, as founded upon the literal construction of an obvious fable, is

^m *Travels to Discover the Source of the Nile, v. 1. p. 514.*

certainly

certainly inadmissible, and unworthy of Mr. B. who thus confounds the allegory with the fact.—It is evidently consistent with the genius and machinery of fable to suppose the Ababil symbolical of a pestiferous contagion, and the stones like peas carried in their claws emblematic of variolous pustules, by which the whole story becomes connected and intelligible: the reason why the stones should be represented so small, and yet be so destructive, is fully explained, and the apparent anachronism, noticed by Mr. Bruce, completely done away. But what claims the most material consideration is, that according to this M.S. of Hameesy, Mr. B. has no doubt of fixing the original introduction of the Small-pox in Arabia at the time of the siege of Mecca. Consequently the neighbourhood of this city was the part of Arabia in which this terrible malady first appeared, and the Abyssinian
army

army of Abrahah was the first victim of its fury.

That a numerous and powerful army invested Mecca with the intent to destroy the Caaba, or holy temple, and to introduce the Christian religion, is well known. Cotemporary history also states this army to have been very unexpectedly defeated,ⁿ inasmuch that

ⁿ It is thus related by Mr. Gibbon.—“The kingdom of Yemen was subject to the Christian princes of Abyssinia; their vassal, Abrahah, was provoked by an insult to avenge the honour of the cross; and the holy city was invested by a train of elephants, and an army of Africans. A treaty was proposed; and in the first audience, the grandfather of Mahomet demanded the restitution of his cattle. “And why,” said Abrahah, “do you not rather implore my clemency in favour of your temple, which I have threatened to destroy?” “Because,” replied the intrepid chief, “the cattle is my own; the Caaba belongs to the Gods, and *they* will defend their house from injury and sacrilege.” The want of provisions, or the valour of the Koreish, compelled the Abyssinians to a disgraceful retreat; their discomfiture has been adorned with a miraculous flight of birds, who showered down stones on the heads of the infidels; and the deliverance was long commemorated by the æra of the elephant.”—*Decline and Fall of the Roman Empire*, v. 5. p. 197. 4to.

the

the Koreish imputed their victory to a miracle or special interference of the gods, while Maracci, with a jealous zeal for the honour of Christianity, boldly ascribes it to an impious stratagem of the devil.^o

But if, according to Hameefy's relation, the Small-pox broke out at that time among the besieging army, the discomfiture of the Abyffinians admits of a ready explanation; and the pretended miracle is seen to be the crafty design of certain interested men, who converted it into a powerful engine in the cause of religion.

Mr. Bruce, from various considerations, dates the siege of Mecca in the year 522; but Mr. Gibbon, upon better authority, says that this event happened only two months before

^o Alcoran, tom. 1. part ii. p. 14. He also extorts from the Mahometans the confession, that God would not have defended against the Christians the idols of the Caaba." *Tom. ii. p. 823.*

the birth of Mahomet;^p a fact which deserves very particular notice; for if the year of the birth of Mahomet be ascertained to be also that of the siege of Mecca, the Arabian M.S. cited by Dr. Reiske, and that written by Hameesy, perfectly coincide; both referring the first appearance of the Small-pox to the same year, viz. that in which Mahomet was born; and, according to Mr. Gibbon, anno Domini 569.^q

Therefore,

^r “Mahomet, or more properly Mahommed, the only son of Abdallah and Amina, was born at Mecca, four years after the death of Justinian, and two months after the defeat of the Abyssinians, whose victory would have introduced into the Caaba the religion of the Christians.” *Gibbon. l. c. p. 198.*

^q “The safest æras of Abulfeda (in Vit. c. i. p. 2.), of Alexander, or the Greeks, 882, of Bocht Naser, or Nabonasser, 1316, equally lead us to the year 569. The old Arabian calendar is too dark and uncertain to support the Benedictines, (Art. de verifier les Dates, p. 15.) who from the day of the month and week deduce a new mode of calculation, and remove the birth of Mahomet to the year of Christ 570, the 10th of November. Yet this date would agree with the year 882 of the Greeks, which is assigned by Elmacin, (Hist. Saracen. p. 5.)
and

Therefore, however the legend of the Ababil be understood, the original commencement of the Small-pox in Arabia, appears on these two independent authorities, to have been in the year 569.

From this æra, which in history bears the appellation of the War of the Elephant, to that of the conquest of Alexandria, in 640, no traces of the existence of the Small-pox are to be discovered; but the disease, as before noticed, certainly spread into that city at the time it was invested by the Saracens; and it may therefore be supposed to have been brought into Egypt by the Mahometan army, which six years before invaded Persia and Syria, where this destructive pestilence probably had already made a considerable progress.

and Abulpharagius (Dynast. p. 101. & Errata Pocock's version). While we refine our chronology, it is impossible that the illiterate prophet was ignorant of his own age." *Gibbon. l. c. p. 198.*

Could the writings of Ahron, who lived at Alexandria during the time it was besieged, be recovered, we might expect to derive some new light on the history of the Small-pox at this early period. It may be presumed, however, that he did not represent the Small-pox as a new disease; since Rhazes, by whom Ahron's works were read and cited, strenuously contends that the variolous distemper was known to Galen: an opinion wholly unfounded.^r For though Galen studied at Alexandria about the middle of the second century, yet neither he nor his successors Aretæus, Cœlius Aurelianus, Oribasius, Aëtius, Alexander Trallianus, nor even Paulus Ægineta,

^r Rhazes seems to have been led into this mistaken interpretation of Galen, by reading an Arabic version of the Greek text; for after referring to the words *ιονθοι, φλεγμοναι, ερπητες*, as signifying Small-pox, he says, "Galen has mentioned nothing more concerning this disease than what I have noticed; but it is possible that he has said more in those books which have not yet been translated into Arabic."

have described any disease resembling the Small-pox. Now as Paulus, who was an Alexandrian cotemporary of Ahron's,^s asserts that he has not omitted in his writings one disease then known, it affords a strong proof, that the variolous distemper was, at the time in which he wrote, not only unknown in Greece and Rome, but even at Alexandria, which was then the grand centre of science and information. As this city was long deemed one of the largest in the world; and as the besieging army, and its followers, were

^s See Rhazes de variolis & morbillis: ed. Canning. This appears by Abulpharagius, on relating the following memorable command of Omar, to his general Amrou, for the destruction of the Alexandrian library:—*Quod ad libros quorum mentionem fecisti; si in illis contineatur, quod cum libro Dei conveniat, in libro Dei (est) quod sufficiat absque illo; quod si in illis fuerit quod libro Dei repugnet, neutiquam est eo (nobis) opus, jube igitur e medio tolli;—and then saying, E medicis autem qui hoc tempore floruerunt fuit Paulus Ægineta medicus suo tempore celebris.*” *Dyn. vers. Pocock. 114.*

known to be extremely numerous, the conjuncture must have proved highly favourable to the rapid and extensive propagation of the new contagion; and the Arabian armies, which in less than eighty years extended over the various and distant provinces, from India to the Atlantic ocean, could not fail to widely disseminate the distemper, and throughout the whole course of their progress add to the devastation of the sword, that of a fatal pestilence.^t

After

^t “The army and most of their attendants, except their children, having previously had the Small-pox, would introduce it into every fresh province they invaded, where it would attack nineteen in every twenty of the inhabitants, and probably prove fatal to a fourth part of the whole people: when the contagion is first introduced among barbarians, its mortality usually rises to this proportion. Let us picture to ourselves the wretched distress that must inevitably result from such complicated calamities. In circumstances so embarrassing, few nations could resist a foreign invasion. It hence appears, that a principal cause of the revolution of nations is buried in the darkest oblivion.”

After this period to the revival of literature in the fifteenth century, succeeded that general state of ignorance and barbarism which characterized the middle ages; and in which the present subject, in common with many others of still more importance, are so obscured in the darkness of the times as to elude the most diligent research.

However, in the eighth and ninth centuries,^u the writings of the Greeks were studied and revived in Syriac and Arabic versions; chemistry became a favourite pursuit with the Arabians; and the healing art, as not the least useful, was protected by the Caliphs, and liberally rewarded by the people. Abulpharagius gives us the names of more than twenty physicians of great reputation, who lived

oblivion." See Dr. Haygarth's sketch of a plan to exterminate the casual Small-pox from Great Britain. Vol. 1. p. 43.

^u From the reign of the Abbassides.

between the time of Ahron and Rhazes; while in the city of Bagdad not less than eight hundred and sixty physicians were licensed to practise their lucrative profession.*

That many of the Arabian physicians wrote on the Small-pox before the tenth century, appears in the works of Rhazes; but as their writings have been long lost, nothing is to be learned of what they have said on the subject, except from a few fragments collected by this venerable author.

On farther tracing the history of medicine in Europe to the establishment of the school of Salernum, and until the fifteenth century, we find that a knowledge of the treatment of Small-pox was so far from being progressive, that the care of the physician ignorant of the Arabian precepts, was sure to accelerate

* Bibl. Arabico-Hispana, tom. i. p. 438.

that

that fatal period of the disease which it was intended to prevent.

Though the Saracen history has taken no notice of the ravages which must have unquestionably accompanied the general spread of the Small-pox during the empire of the Caliphs, yet it is not wholly destitute of collateral evidence, inferring the progress or prevalence of this disease. Thus, in the description of the person of the Caliph Yezid, who died in the year 683, it is said that he was pitted with the Small-pox;^y and the Caliph Abul-Abbas Alaffah, in the year 753, actually died under that distemper.^z

At what time the Small-pox was originally brought into Britain, it is utterly impossible to ascertain. Most authors who have offered

^y Ockley, Saracen Hist. vol. ii. p. 247.

^z Porro anno 136 Dul Hajjæ mortuus est variolis Als affahus. Abulpharagius. *Dyn.* p. 139.

any conjectures on this subject, suppose that the disease was imported into Europe by the return of the Crusaders, whose fanatical expeditions to the Holy Land, produced such multiplied disasters. Thus Baron Dimsdale says, “ it is allowed that the Small-pox was imported from Asia at the time of the Crusades, and made its first appearance in Europe about the thirteenth century ; soon after which, innumerable writers describe the distemper.”^a But from the known activity of variolous matter, and the great length of time during which it retains its infectious quality, it does not appear probable that the Small-pox could prevail six or seven centuries over various parts of Asia, having free intercourse with Europe, before it was conveyed into this kingdom. And, to confirm this opinion, numerous facts might

^a *Observations on the introduction of the plan of the Dispensary for general Inoculation. p. 76.*

be adduced, proving that variolous matter, adhering to woollen, cotton, linen, and such like materials, has fatally communicated the contagion to very distant countries.

When the Small-pox was first introduced here, it must, by rapidly multiplying and spreading over the whole island, have caused a very alarming and extraordinary mortality among mankind. For wherever history has recorded the ravages of this distemper on its first importation into any country, it is always found that the victims to the contagion amount to a number which appears almost incredible. Thus, in 1520,^b when the Small-pox first visited New Spain, it proved fatal to one half of the people in the provinces to which the infection extended; and various other nations and climates furnish instances of a mortality

^b The Small-pox was first introduced into New Spain in 1520, by a negro slave, who attended Narvaez in his expedition

tality proportionally great.^c There can be no doubt, therefore, that the variolous contagion, on first spreading in this country, produced

tion against Cortes. Torribio affirms, that one half of the people in the provinces visited with this distemper, died. The Small-pox was not introduced into Peru for several years after the invasion of the Spaniards; but there too that distemper proved very fatal to the natives. *Garcia Origen. p. 88. cited in Robertson's History of America. vol. iii. p. 400.*

About fifty years after the discovery of Peru, the Small-pox was carried over from Europe to America, by way of Carthage, when it over-ran the continent of the new world, and destroyed upwards of 100,000 Indians in the single province of Quito. This account was found by M. La Condamine, in an ancient M.S. preserved in the cathedral of that city. This author also observes, that in the Portuguese settlements bordering upon the river Amazons, the Small-pox is fatal to all the natives, i. e. original Americans. See his *Mem. sur l'inoc. p. 61.*

^c The Small-pox was first introduced into the frozen region of Greenland in 1733; when the mortality of this disease was so great, that it almost depopulated the whole country. See Crantz's *Hist. of Greenland, vol. i. p. 336.*

Even so lately as the year 1793, when the Small-pox was conveyed to the Isle of France, in the East Indies, by a Dutch Ship, 5400 persons perished there by this distemper in six weeks.

very

very fatal effects; yet such was the gross ignorance prevailing at the time, that none of the chronicles, or cotemporary annals of remarkable occurrences, have recorded the melancholy event.^d Nor do the earliest English medical authors, whose writings have been published, say any thing on this curious subject. But though the sources of information most likely to supply this defect have hitherto failed, yet among the number of books which I examined for this purpose in the immense stores contained in the British Museum, I have been enabled to trace the existence of the Small-pox in our island, and on the neighbouring continent, long before the Crusades took place. For in some of the M.SS. of the

^d In the year 1365, Holinshed says, "Manie died of the Small-pocks, both men, women, and children."

Short (but upon what authority I have not been able to discover) says, "Princess Elfrida was affected with the Small-pox, A. D. 907."—See his *Chronology*.

Harlean

Harlean^e and Cottonian^f collections, bearing indubitable evidence of being written before the year 900, the word Variolæ occurs several times in the same sense in which it is now used; it also seems to have been sometimes written in connection with an adjective, as variolæ minutæ.^g We likewise learn from these M.SS. that the inhabitants in those early times lived in continual dread of the Small-pox; as several prayers, exorcisms, and incantations, to which they had recourse for preservation from the variolous contagion, are to be found.

Whether the word variolæ, or variola, which is not of ancient classical authority, was originally and exclusively used in the

^e In N° 585 of the Harlean Catal. vol. i.

^f See Bibl. Cotton. Caligula A. XV. N° 30.

^g "St. Nicasius habuit minutas variolas & rogavit Dominum ut quicumque nomen suum fecum portare scriptum St. Nicasii presul & martir egregie ora pro me peccatore & ab hoc morbo tua intercessione me defende," Am. Bibl. Cot. l. c.

strict signification it bears at present, may be somewhat doubtful;^h but in the M.SS. here alluded to, the word is unquestionably employed to express the Small-pox; and hence the learned author of the *glossarium ad scriptores medicæ & infimæ Latinitatis*, who ascribes the first use of this word to Constantinus Africanus, in the eleventh century, is certainly mistaken. Constantinus, however, was evidently the most learned physician in his time; and his is the oldest printed book in which the word variola is found;ⁱ but as he studied at Salerno before he practised medicine at Bagdad, it was probably from the Salernian School that he adopted it.

^h Marius Aventicensis, who was bishop of Laufanne, in the seventh century, says, “Hoc anno morbus validus cum profluvio ventris & variola Galliam Italiamque valde afflixit.”—Vide *Miracula, S. Ludgeri episcopi Mimigard. n. 29. 33. lib. 2.*

ⁱ See Lib. vii. cap. viii. & second part, cap. xiv. p. 226.

By the first British medical writers, which were those of the thirteenth century, the Small-pox is very generally noticed: and from the days of John of Gaddefden, who ordered the beds of his variolous patients to be hung with scarlet cloth, as the best cure,^k to those of the immortal Sydenham, whose judicious treatment of the Small-pox has been but little improved, physicians have bestowed the utmost attention on this important disease.

^k A son of king Edward the First or Second, having the Small-pox, was, by John's direction, wrapped in scarlet, and the bed covered with the same colour, which he says, "*est bona cura.*"

SECTION II.

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BY what means the Inoculation of the Small-pox was first discovered, or at what time and place it was first used, we are totally ignorant. No satisfactory reason has yet been given why the inoculated Small-pox should almost universally appear in a mild and favourable manner, nor is it possible to explain the fact upon any medical principle: it may be inferred,

therefore, that the art of inoculation, which is capable of saving more lives than the whole *Materia Medica*, was originally a fortuitous discovery: and I may add, that to the dishonour of the medical profession, it was for several ages under the management of old women, and ignorant persons, in this and many other countries, before it was patronized and adopted by the legitimate practitioners of medicine.

An ingenious writer^a has observed, that as the Arabian physicians were the first informed of the nature and treatment of the Small-pox, they were also the most likely to invent the mode of inoculating this distemper; and he thinks it not improbable but that among the numerous Arabian M.SS. with which the several public libraries are stored, inoculation may yet be discovered to be of

^a Mr. Maty. See *Second memoire sur l'inoculation, par M. De La Condamine.*

Arabian origin. As Avicenna is said to have lived at Bokhara near Samarcand on the eastern coast of the Caspian sea, in the 10th century, and as the countries between the Caspian and Euxine seas have been supposed to be the centre from which inoculation spread to other places, he thinks either that celebrated physician, or one of his disciples, might have been the author of this valuable invention. Hence he conjectures, that the practice of inoculation was originally carried from the borders of the Caspian sea, on the side of India, to Surat, Bengal, and China, by the Tartars and Chinese, who traded to Bokhara; and on the other side, by the Mahometan pilgrims to Mecca; thence to the places in Africa, bordering on the Mediterranean sea, and into different parts of Greece. However, the reasons upon which the whole of this conjecture is founded, appear to me very

c 2

unsatisfactory.

unsatisfactory. In the first place we have no evidence that the Circassians, or indeed any of the inhabitants of the countries near the Caspian sea, have practised the art of inoculating the Small-pox longer than those of any other nation. And D'Entrecolles has remarked, that the Tartars, in the year 1724, were so entirely ignorant of inoculation, that the emperor of China at that time sent some of his physicians into Tartary for the purpose of practising this art,^b who, in consequence of their success, were rewarded with the most valuable presents the country afforded. The same author has also observed, that in the province of Kiagnan, and in the eastern parts of China, inoculation is more ancient than in

^b He also says, that the Tartars consider the Small-pox as a species of the plague; whence as soon as it is discovered that any one is taken ill of it, every person abandons him, and he finds no other resource than in the goodness of his constitution.—

Lettres edifiantes & curieuses, tom. 21. p. 11. ed. 1781.

the western parts of that empire; the reverse of which must have been the fact had this practice travelled from west to east.^c—Inoculation was certainly first introduced into Constantinople from the Morea; but as this event did not take place till towards the end of the last century, we may conclude, that had the art been practised for many ages at so short a distance from that metropolis, it would have been known there much sooner. Besides, in various countries, very remote from the Caspian sea, it proved to have been an immemorial usage.

Inoculation was introduced into London as a foreign invention, and from its success upon the younger branches of the royal family in 1722, became the subject of public conversa-

^c D'ailleurs si ce secret eût été apporté à la Chine par les caravanes venues des environs de la mer Caspienne, il auroit commencé à être connu dans la province de Chenfi, *l. c.*

tion, when, to the great surprize of the learned, several communications to the Royal Society proved that it was already a practice known in South Wales, where it had existed under the denomination of buying the Small-pox, as far back as tradition could be traced.— That this Cambrian mode of buying the Small-pox was in effect the same as the Byzantine inoculation, then just adopted in England, the letters of Dr. Williams, Mr. Owen, and Mr. Wright,^d bear ample testimony. The last mentioned gentleman writes to Mr. Silvanus Bevan as follows:—“ I received yours the 9th inst. and, in answer to it, will readily give you all the satisfaction I can in relation to a very ancient custom in this country, commonly called *Buying the Small-pox*; which, upon

^d These letters may be seen in the Philosophical Transactions for the year 1722; and in Dr. Jurin's account of the success of Inoculation in 1723.

strict inquiry since I had your letter, I find to be a common practice, and of a very long standing, being assured by persons of unquestionable veracity, and of advanced age, that they have had the Small-pox communicated to themselves in this way, when about sixteen or seventeen years of age: they then being very capable of distinguishing that distemper from any other, and that they have parted with the matter contained in the pustules to others, producing the same effects. There are two large villages in this county, near the harbour of Milford, more famous for this custom than any other, namely, St. Ishmael's and Marloes. The old inhabitants of these villages say, that it has been a common practice with them time out of mind; and what was more remarkable, one W. Allen, of St. Ishmael's, ninety years of age, who died about six months ago, declared to some persons of

good sense and integrity, that this practice was used all his time, and that he got the Small-pox that way. These, together with many other informations I have met with, from all parts of the country, confirm me in the belief of its being a very ancient and common practice among the common people; and to prove that this method is still continued among us, I will give you the relation of an elderly woman, a midwife (who accidentally came into company when your letter was reading), whose name is Joan Jones, aged seventy years, of good credit, and perfect memory. She solemnly declares, that about fifty-four years ago, having the Small-pox, one Margaret Brown, then about twelve or thirteen years of age, bought the Small-pox of her; and she further says, that she has known this way of procuring the Small-pox practised from time to time above fifty years; that it has been lately

lately used in her neighbourhood; and she knows but of one dying of the said distemper when communicated after the method aforesaid, which accident happened within these two last years: the person who miscarried (a young woman) having procured the distemper from a man dying of a very malignant Small-pox."

The manner of inoculating, or buying the Small-pox, here alluded to, was not always the same, but was varied by different persons. Dr. Williams says, "They either rub the matter, taken from the pustules when ripe, on several parts of the skin of the arms, &c. or prick those parts with pins, or the like, first infected with the same matter." Mr. Owen, and five of his school-fellows, scraped the skin with a knife until the blood began to flow, before they applied the variolous pus. Others produced the distemper, by holding a certain number of dried pustules for a
considerable

considerable time in the palm of the hand. We are also informed, that the inhabitants of the Highlands of Scotland,^c for many ages, have had recourse to a species of inoculation, performed by tying worsted threads, moistened with variolous matter, round the wrists of their children. This vulgar or domestic custom of inoculating the Small-pox likewise prevailed in many other parts of Europe, and in various countries of Asia and Africa; and, what is highly curious, in several of these distant nations, the practice was, as in Wales, termed buying the Small-pox. For it was superstitiously imagined, that inoculation would not produce the proper effect unless the person from whom the variolous matter was taken, received a piece of money, or some other article in exchange for it, from

^c See Monro on Inoculation in Scotland.

those whom it was intended to infect. At Naples, Mons. de la Condamine, in 1769, learned that inoculation had been secretly used by the people there from time immemorial: and the celebrated P. Boscovich assured him it was practised in the same manner at Pavia, where the nurses often inoculated, without the parents knowledge, the infants entrusted to their care. For this purpose they commonly rubbed the palm of the hand of the child with fluid variolous matter, recently taken from a pustule. It is related, that a lady at Pavia, whose child had the Small-pox, expressed her satisfaction that the distemper was of a very favourable kind; *Je le crois bien*, replied the nurse; *je lui ai acheté de la meilleure et à bon marché*. The practice of buying or inoculating the Small-pox prevailed also in some of the provinces of France, especially in Auvergne and in Perigord; and still more generally among the ignorant

ignorant peasantry in many parts of Germany,^f Denmark, and Sweden.^g But in the Northern parts of Europe this practice seems to have been less complete^h than that adopted on the southern and eastern coasts of the Mediterranean sea. For in Barbary and in the Levant, though they placed implicit confidence in the efficacy of buying or purchasing the variolous pustules; yet their method of performing the

^f See Condamine, *l. c.* He also says, Ce n'est pas seulement dans le Duché de Cleves & dans le comté de Mœurs, où le Docteur Schwenke trouva cet usage établi en 1713: il y a près d'un siècle qu'on le connoissoit en Dannemarck, puisque Bartolin en fait mention dans une lettre sur la transplantation des maladies, imprimée à Copenhague en 1637.

Le Docteur Carhuri, premiere professeur de médecine en l'université de Turin, natif de Céphalonie, m'a dit en 1756, que l'inoculation étoit en usage dans cette Isle avant l'an 1537.

^g See Professor Murray's *Historia infectionis variolarum in Suecia*. p. 96. *Schultz's Account of Inoculation*, 65. *Ephem. Germ. An. 2. A. D. 1671. Obs. 165. Also An. 8. Anni 1677. Obs. 15. Werlhof, Disq. de variolis et anthracibus*, p. 19.

^h Vide *Roeder. Diff. utrum naturalibus præstent variolæ artificiales*, p. 34.

operation

operation was such as could not fail of producing the inoculated Small-pox. The infectious matter was inserted at a small incision, made in the fleshy part of the hand, between the thumb and fore-finger; and, according to Dr. Shaw, "the person who is to undergo the operation, receives the infection from some friend or neighbour, who has a favourable kind, and who is entreated to sell two or three of his pustules, for the same number of nuts, comfits, or such like trifles. This they call purchasing the Small-pox; and among the Jews the purchase alone was a sufficient preparative for the infection."ⁱ This account of inoculation differs not materially from that practised in the kingdoms of Tripoli, Tunis, and Algier, as related by his excellency Cassem Aga, in 1728,^k when ambassador to our court. He

ⁱ Shaw's Travels into Barbary and the Levant, p. 267.

^k See Scheuchzer's Account of the Success of inoculating the Small-pox in Great Britain for the years 1727 & 1728, p. 61.

says,

says, " If any one has a mind to have his children inoculated, he carries them to one that lies ill of the Small-pox, at the time when the pustules are come to full maturity. Then the surgeon makes an incision on the back of the hand, between the thumb and fore-finger, and puts a little of the matter, squeezed out of the largest and fullest pustules, into the wound. This done, the child's hand is wrapped up in a handkerchief, to keep it from the air, and he is left to his liberty, till the fever arising confines him to his bed, which commonly happens at the end of three or four days. After that, by God's permission, a few pustules of the Small-pox break out upon the child. This practice is so innocent, and so sure, that out of 100 persons inoculated, not two die; whereas, on the contrary, out of 100 persons that are infected with the natural Small-pox, there die commonly about
thirty.

thirty. Inoculation is so ancient in the kingdoms of Tripoli, Tunis, and Algier, that nobody remembers its first rise; and it is not only practised by the inhabitants of the towns, but also by the wild Arabs."

That this practice is very common with the Arabs, and is by them also called buying the Small-pox, fully appears from Dr. Ruffell's communication to the Royal Society.¹ About the year 1758, while this ingenious physician was on a visit at a Turkish Harem, a lady happened to express much anxiety for an only child who had not had the Small-pox; the distemper at that time being frequent in the city. None of the ladies in the company had ever heard of inoculation, so that the Doctor having once mentioned it, was obliged to enter into a detail of the operation, and the

¹ An Account of Inoculation in Arabia, in a letter from Dr. Patrick Ruffell. Phil. Transf. vol. 56. p. 140.

peculiar advantages attending it. Among the female servants in the chamber, was an old Bedouin Arab, who having heard the Doctor with great attention, assured the ladies, that the account given by the Doctor was upon the whole a just one; only that he did not seem well to understand the way of performing the operation, which she asserted should not be done with a lancet but with a needle:* she added, that she herself had received the disease in that manner when a child, and had inoculated many; that the whole art was well known to the Arabs, and that they termed it buying the Small-pox. In consequence of this hint, Dr. Ruffell made further inquiries, by which he discovered, that inoculation had been of long standing among

* Niebuhr has since told us, that the Bedouin women inoculate their children "avec une epine, faute de meilleur instrument."—*Descr. de L'Arabie. p. 123.*

them. They, indeed, did not pretend to assign any period to its origin; but persons seventy years old and upwards, remembered to have heard it spoken of as a common custom of their ancestors, and they believed it to be of as ancient a date as the disease itself. Dr. Russell was likewise assured, that inoculation was equally common among the eastern Arabs, being practised not only at Bagdad and Moful, but also at Baffora; and that at Moful particularly, when the Small-pox first appeared in any district of the city, it was a custom sometimes to give notice by a public crier, in order that those who were so inclined might take the opportunity to have their children inoculated. In Armenia, Dr. Russell says, "the Turkoman tribes, as well as the Armenian Christians, have practised inoculation since the memory of man; but, like the Arabs, are able to give no account of its first

introduction among them. At Damascus, and all along the coast of Syria and Palestine, inoculation has been long known. In the Castravan mountains it is adopted by the Drusi as well as the Christians. Whether the Arabs of the desert to the south of Damascus, are acquainted with this manner of communicating the Small-pox, I have not hitherto been able to learn; but a native of Mecca, whom I had occasion to converse with, assured me that he himself had been inoculated in that city. In the different countries before mentioned, inoculation is performed nearly in the same manner. The Arabs affirmed, that the puncture might be made indifferently in any fleshy part: those I have had occasion to examine, have all (a very few excepted) had the mark between the thumb and fore-finger. Some of the Georgians had been inoculated in the same part, but most of them on the
fore-arm.

fore-arm. Of the Armenians, some had been inoculated in both thighs ; but the greater part, like the Arabs, bore the mark upon the hand. Some of the Georgian women remembered that rags, of a red colour, were chosen in preference for binding up the arm, a circumstance of which we have not been able to discover any trace among the Arabs."

"Buying the Small-pox, is likewise the name universally applied to the method of procuring the disease. There are, it is true, other terms made use of both in the Arabic and Turkish languages ; and in this place it is principally known to the Christians by the name of Inoculation. It is termed buying the Small-pox on the following account :—The child to be inoculated carries a few raisins, dates, sugar-plums, or such like, and shewing them to the child from whom the matter is to be taken, asks how many pocks he will give in exchange.

The bargain being made, they proceed to the operation. When the parties are too young to speak for themselves, the bargain is made by the mothers."

From the various accounts of inoculation here related, it is highly curious that in so many distant nations, differing widely in manners, customs, laws, habits, and religion, this art should be generally known by the name of "Buying the Small-pox." It is also to be considered as a remarkable proof of its great antiquity, that the less civilized part of mankind, or people of the most simple and uniform habits have retained this custom the longest. We might still have been unacquainted with the method of communicating the Small-pox in Arabia, had it not been accidentally discovered by Dr. Ruffell, from the Bedouin woman in the Harem. Hence we are not to be surpris'd that it escap'd those diligent
observers,

observers, Rauwolf and Turnefort. Having before related Caffim Aga's account of inoculation in Tripoli, Tunis, and Algiers, I think it proper to add, that there are likewise proofs of its long usage in Senegal; and that the negroes in the interior parts of Africa, whenever the Small-pox threatens to invade them, have recourse to inoculation, performing the operation in the arm, and obliging the patients to abstain from animal food, and suffering them to drink nothing but water, acidulated with the juice of limes.^m

In Hindostan this practice should seem to be a more ancient custom than in China; for D'Entrecolles, by obtaining access to several medical books at Peking, discovered that one of them gave some account of the introduction

^m See the Letter of C. Colden, Esq. to Dr. J. Fothergill in *Med. Obs. & Inq.* vol. i. p. 227. Also the "Narrative of the Method of Success of Inoculation in New England," by D. Neal, p. 24.

of inoculation into China, and stated that in this empire, as well as in several parts of Europe, it had to encounter strong opposition. The author of the book here alluded to, lived in the latter part of the dynasty of *Ming*; hence it may be concluded, that inoculation in China has not yet been practised two hundred years;ⁿ whereas, in Hindostan, from tradition it can be traced much farther back, and seems to have been an immemorial custom; and the methods of practising this art by the Chinese and Hindoos are so widely different as clearly

ⁿ L'auteur que je viens de citer, vivoit à la fin de la dynastie *Ming*, c'est-à-dire, il y a environ cent ans. Il n'est pas surprenant qu'une méthode qui étoit alors nouvelle, & qui n'étoit pas encore autorisée par un long usage, fût combattue & traversée. — Quoiqu'il en soit, cent ans de possession donnent à cette méthode le droit d'une ancienneté assez considérable sur l'insertion, qui n'a été en quelque vogue à Constantinople que dans ce dix-septième siècle. D'Entrecolles, l. c. p. 10.

^p See *An account of the Manner of inoculating the Small-pox in the East Indies.*

to shew that they could not be derived from the same origin. The Chinese, in order to inoculate, take from two to four dried variolous pustules or scales (according to their size), between which they place a small portion of musk; the whole is then wrapped up in cotton, and inserted within the nostril of the patient. If the child undergoing the operation be a male, this infectious tent is introduced into the left, but if a girl, into the right nostril. The scales, thus used, are to be kept in a close jar for several years. When the Chinese are obliged to use recent pustules, they think it necessary to correct the acrimony of the matter, by exposing it to the steam of an infusion of the roots of scorzoneria and liquorice. They sometimes reduce the dried scales into powder, and form them into a paste, for the purpose of inoculation.

The application of variolous matter, wrapped in cotton, within the nostrils, must be a

very precarious mode of communicating the Small-pox, and may perhaps afford a reason why inoculation in China is less successful than in other countries. For if the matter acts in the way of inoculation, a troublesome inflammation of the schneiderian membrane must ensue;^o and should this not take place, the variolous effluvia, by being inhaled into the lungs, will produce the natural Small-pox. On the contrary, inoculation, as practised in Hindostan by the Bramins, very rarely fails of producing the distemper in the most favourable way: I shall therefore circumstantially relate the whole process in the words of Mr. Holwell.^p “Inoculation is performed in Indostan by a particular tribe of Bramins, who are delegated annually for this service from the different colleges of Bindoobund,

^o This appears by Dr. Mead's Experiment upon one of the condemned criminals at Newgate.

^p L. c.

Eleabas, Banaras, &c. over all the distant provinces; dividing themselves into small parties of three or four each; they plan their travelling circuits in such wise as to arrive at the places of their respective destination some weeks before the usual return of the disease; they arrive commonly in the Bengal provinces early in February; although, in some years, they do not begin to inoculate before March, deferring it until they consider the state of the season, and acquire information of the state of the distemper. The inhabitants of Bengal, knowing the usual time when the inoculating Bramins annually return, observe strictly the regimen enjoined, whether they determine to be inoculated or not; this preparation consists only in abstaining for a month from fish, milk, and gee (a kind of butter made generally of buffalo's milk): the prohibition of fish respects only the native Portuguese and Mahomedans,

medans, who abound in every province of the empire. When the Bramins begin to inoculate, they pass from house to house, and operate at the door, refusing to inoculate any who have not, on a strict scrutiny, duly observed the preparatory course enjoined them. It is no uncommon thing for them to ask the parents how many pocks they choose the children should have: vanity, we should think, urged a question on a matter seemingly so uncertain in the issue; but true it is, that they hardly ever exceed or are deficient in the number required. They inoculate indifferently on any part; but if left to their choice, they prefer the outside of the arm, midway between the wrist and the elbow, and the shoulders for the females. Previous to the operation, the operator takes a piece of cloth in his hand (which becomes his perquisite if the family is opulent), and with it gives a dry friction upon
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the part intended for inoculation, for the space of eight or ten minutes; then, with a small instrument he wounds, by many slight touches, about the compass of a silver groat, just making the smallest appearance of blood; then opening a linen double rag (which he always keeps in a cloth round his waist), takes from thence a small pledget of cotton, charged with the variolous matter, which he moistens with two or three drops of the Ganges water, and applies it to the wound, fixing it on with a slight bandage, and ordering it to remain on for six hours without being moved; then the bandage to be taken off, and the pledget to remain until it falls off itself. The cotton, which he preserves in a double callico rag, is saturated with matter from the inoculated pustules of the preceding year; for they never inoculate with fresh matter, nor with matter from the disease caught in the natural way,

way, however distinct and mild the species. Early on the morning succeeding the operation, four collons (an earthen pot containing about two gallons) of cold water, are ordered to be thrown over the patient from the head downwards, and to be repeated every morning and evening until the fever comes on, which usually is about the close of the sixth day from the inoculation; then to desist until the appearance of the eruption (about three days), and then to pursue the cold bathing, as before, through the course of the disease, and until the scabs of the pustules drop off. They are ordered to open all the pustules with a fine sharp pointed thorn as soon as they begin to change their colour, and whilst the matter continues in a fluid state. Confinement to the house is absolutely forbid, and the inoculated are ordered to be exposed to every

every air that blows, and the utmost indulgence they are allowed, when the fever comes on, is to be laid upon a mat at the door; but in fact the eruptive fever is generally so inconsiderable and trifling as very seldom to require this indulgence. Their regimen is ordered to consist of all the refrigerating things the climate and season produces, as plantains, sugar-canes, water-melons, rice, gruel made of white poppy seeds, and cold water, or thin rice gruel for their ordinary drink. These instructions being given, and an injunction laid on the patients to make a thanksgiving *poojah*, or offering, to the goddess: on their recovery, the operator takes his fee, which from the poor is a *pund of cowries*, equal to about one penny sterling, and goes on to another door, down one side of the street, and up on the other, and is thus employed

employed from morning till night, inoculating sometimes eight or ten in a house.”⁹

This, and indeed all the preceding accounts of inoculation, as anciently practised in different countries, if we except that of the Chinese, were not known in London till after this art had been regularly adopted in England.

⁹ Long before this account of Mr. Holwell’s was published, Chais stated the practice of inoculation at Bengal in the following manner:—“que les gens du pays se servent pour cet effet d’un cordon de foye torse conservé dans de la matière amassée de divers grains; qu’ils enfilent ce cordon dans une aiguille, & qu’ensuite ils le passent entre chair & cuir, soit au bras soit au gros de jambe.—Une dame Angloise, veuve du Secrétaire du Fort-William, avoit fait inoculer ses deux enfans de cette manière par un medecin Bengalois; & ce medecin, dit Mr. A...d, l’avoit assurée qu’il conservoit encore de la matière qu’avoit amassée son grand pere, ou même son bifayeul. Il ajoute, que probablement la pratique de l’inoculation est en usage depuis plusieurs siècles dans l’Indostan.”——Mr. Chais received this information by letter from his friend residing at Bengal.—See *Essai Apologétique sur la méthode de communiquer la petite vérole par inoculation*, p. 122.—Sonnerat asserts, that the Indians do not practice inoculation.—*Voyage aux Indes Orient.*

Éc., tom. i. p. 117.

But

But the Chinese method, as being less understood, and not so well authenticated here as that used at Constantinople, must have appeared to the English less eligible; consequently the latter mode was preferred, and as it was then said to have been borrowed from the Circassians,^r I shall mention De La Motraye's relation of inoculation among that people. This gentleman, in 1711, saw the operation performed upon a Circassian girl, four or five years of age. The girl, after being purged with dried fruit, was carried to a young boy, who had the natural Small-pox in a state of suppuration, and an

^r Mr. Porter, who was the British Ambassador at Constantinople, learned "that it was neither the Circassians, Georgians, nor Asiatics, that introduced the practice. The first woman was of the *Morea*; her successor was a *Bosniac*; they brought it from Thessaly, or the Peloponnesus, now *Morea*." See his letter to Maty, dated Constantinople, Feb. 1755, in *Phil. Transf.* for 1756. This will also be found to agree with Pylarini's report of inoculation, which I shall soon have occasion to notice.

old woman (for women far advanced in age are the only practitioners of medicine in Circassia) was employed to transplant the distemper, in the following manner:——“ She took three needles fastened together, and pricked first the pit of the stomach; secondly, directly over the heart; thirdly, the navel; fourthly, the right wrist; and, fifthly, the ankle of the left foot till the blood came; at the same time she took some matter from the pustules of the boy, and applied it to the bleeding part, which she then covered with dried angelica leaves, and afterwards with some of the youngest lamb-skins; and having bound them all well on, the mother wrapped up her daughter in one of the skin-coverings, which, as I have observed, compose the Circassian beds, and carried her thus packed up, in her arms, to her own house, where she was to continue to be kept warm, eat only a sort of

pap made of cummin flour, with two-thirds water, and one-third sheep's milk, without either flesh or fish; and to drink a sort of ptifan, made with angelica, buglofs roots, and liquo- rice, which are all very common throughout this country; and they assured me, that with this precaution and regimen, the Small-pox generally came out very favourably in five or six days." ^s

But it was immediately from Constantinople that the English first derived a competent knowledge of the advantages of inoculation; and to shew in what shape, and on what grounds, the practice of it came originally recommended here, I shall transcribe a part of the extract of Dr. Emanuel Timoni's account of this subject, communicated by Dr. Woodward to the Royal Society, and published in

^s De La Motraye, Travels through Europe, Asia, and into part of Africa, vol. ii. p. 75.

the transactions of that body for the year 1714.
“ The writer of this ingenious discourse, observes (says Dr. W.), in the first place, that the Circassians, Georgians, and other Asiatics, have introduced the practice of inoculation for about forty years among the Turks and others at Constantinople. That although at first the more prudent were very cautious in the use of this practice, yet the happy success it has been found to have in thousands of subjects for these eight years past, has now put it out of all suspicion and doubt: since the operation having been performed upon persons of all ages, sexes, and even in the worst constitutions of the air, yet none have been found to die of the Small-pox; when at the same time it was very mortal when it seized the patients in the common way, of which half the affected died. This he attests on his own observation. Next he observes, they that have the operation

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tion practised upon them, are subject to very slight symptoms, some being scarce sensible they are ill or sick, and, what is valued by the fair, it never leaves any scars or pits. The method of operation is thus:—Choice being made of a proper contagion, the matter of the pustules is to be communicated to the person proposed to take the infection; whence it has been metaphorically called infusion or inoculation. For this purpose they make choice of some boy or young lad, of a sound healthy temperament, that is seized with the common Small-pox (of the distinct, not flux sort): on the twelfth or thirteenth day from the beginning of his sickness, they with a needle prick the tubercles (chiefly those of the shins and hams), and press out the matter from them into some convenient vessel of glass, or the like, to receive it; it is convenient to wash and clean the vessel first with warm water.

A convenient quantity of this matter being thus collected is to be stopped close, and kept warm in the bosom of the person that carries it, and as soon as may be brought to the place of the expecting future patient. The patient, therefore, being in a warm chamber, the operator is to make several little wounds with a needle, in one or more places of the skin, till some drops of blood follow, and immediately to drop out some drops of the matter in the glass, and mix it well with the blood issuing out: one drop of the matter is sufficient for each place pricked. These punctures are made in any of the fleshy parts, but succeed best in the muscles of the arm or radius. The needle is to be a three-edged surgeon's needle; and may likewise be performed with a lancet. The custom is to run the needle transverse, and rip up the skin a little, that there may be a convenient dividing of the part, and the

mixing

mixing of the matter with blood more easily performed, which is done either with a blunt stile or ear-picker: the wound is to be covered with half a walnut-shell, or the like, bound over, that the matter may not be rubbed off by the garments, which is all removed in a few hours. The patient is to take care of his diet. In this place, the custom is to abstain wholly from flesh or broth for twenty or twenty-five days. The operation is performed either in the beginning of winter or spring."

The publication of this account of the Byzantine mode of inoculation was soon followed by that given by Dr. James Pylarini, and inserted in the same volume of the transactions of the Royal Society for the year 1716. Pylarini, who was the Venetian consul at Smyrna, says, inoculation was first discovered in that part of Greece, called Theffaly, from thence it was brought to Constantinople,

where it was practised only among the lower class of people till the year 1701, when the Small-pox being very mortal in that city, a great many noble families submitted to inoculation; but that the Turks, believing in predestination, refused to use any precaution whatever. He describes the operation as conducted in his presence upon four sons of a Greek nobleman, by an old Greek woman, who had been in the constant practice of inoculation for a long series of years. This operatrix inoculated by inserting the variolous matter into a number of punctures, made in the forehead, cheeks, chin, and also in both wrists: the patients were then confined in a warm chamber, and to a vegetable diet, for forty days. Pylarini does not, like Timoni, speak of inoculation as indiscriminately and constantly successful, but hints, that the number of pustules and symptoms will

will be found to vary according to the habit of body, and the temperament of the patient.*

It is necessary to observe, that the year before Pylarini's account of inoculation appeared in the Philosophical Transactions, this new method of communicating the Small-pox at Constantinople, was published by Surgeon Kennedy, in his *Essay on External Remedies*. This gentleman, who seems to be the first British author on the subject of inoculation, tells us, that he was credibly informed both by the physicians and merchants of Constantinople, that of two thousand persons who had

* Hence Dr. Strother, in his *Dissertations upon the Ingraftment of the Small-Pox*, in 1722, contended that Inoculation must frequently be attended with much danger, as actually happened in one of the four cases mentioned by Pylarini, who says, "Ætate verò major, octavum super decimum agens annum, graviter decubuit: nam continenti febre & malignante correptus, superveniente difficilium symptomatum syndrome, plusculisque quanquam non copiosis exanthematibus obrutus, vix post decimum quartum diem morbum elusit."

lately received the Small-pox by inoculation, all recovered except two, and of these two the proper care had not been taken. I may here also notice, that soon afterwards the subject of inoculation was revived by the letters of Lady Mary Wortley Montagu. For in one written from Adrianople, she says, "The Small-pox, so fatal and so general amongst us, is here entirely harmless, by the invention of *ingrafting*, which is the term they give it. There is a set of old women who make it their business to perform the operation every autumn, in the month of September. When the great heat is abated, people send to one another to know if any of their family has a mind to have the Small-pox; they make parties for this purpose, and when they are met (commonly fifteen or sixteen together), the old woman comes with a nut-

^u Vol. ii. Let. 31.

shell-full of the matter of the best sort of Small-pox, and asks what vein you please to have opened. She immediately rips open that you offer to her with a large needle (which gives you no more pain than a common scratch), and puts into the vein as much matter as can lie upon the head of her needle, and after that binds up the little wound with a hollow bit of shell; and in this manner opens four or five veins. The Grecians have commonly the superstition of opening one in the middle of the forehead, one in each arm, and one in the breast, to make the sign of the cross; but this has a very ill effect, all those wounds leaving little scars, and is not done by those who are not superstitious, who choose to have them in the leg or that part of the arm that is concealed. The children, or young patients, play together all the rest of the day, and are in perfect health to the eighth. Then

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the fever begins to seize them, and they keep their beds two days, very seldom three. They have very rarely above twenty or thirty in their faces, which never mark, and in eight days time they are as well as before their illness. Where they are wounded, there remain running sores during the distemper, which I do not doubt is a great relief to it. Every year thousands undergo this operation; and the French ambassador says, pleasantly, that they take the Small-pox here by way of diversion, as they take the waters in other countries. There is no example of any one that has died in it; and you may believe I am well satisfied of the safety of this experiment, since I intend to try it on my dear little son. I am patriot enough to take pains to bring this useful invention into fashion in England; and I should not fail to write to some of our doctors very particularly about it, if I knew any
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of them that I thought had virtue enough in them to destroy such a considerable branch of their revenue, for the good of mankind.— Perhaps, if I live to return, I may however have courage to war with them.”

These various communications, stating the advantages of inoculation upon indubitable authority, as well as similar accounts of the success of this new practice, orally given by merchants and others, who, from business or pleasure, had visited the Ottoman metropolis, could not fail greatly to interest many in this country. Indeed, any scheme much less plausible than the present, which promised to disarm of its terrors so universal and destructive a distemper as the Small-pox, must have had a strong claim to the attention and patronage of any nation. Among the English, therefore, whose fondness for novelties is proverbial, it is somewhat surprising that
inoculation

inoculation was not attempted before the year 1721: and it was not until the beginning of that year that a further recommendation of inoculating the Small-pox was published in England, when the subject was undertaken by Dr. Jacob a Castro.* This author describes the modes of inoculation as laid down by Timoni and Pylarini, and urges many arguments to induce the physicians of London to adopt the new practice, which he contends must evidently be of great national utility. "The Turks," he says, "and other unlearned and barbarous people, at first declared very much against the practice; but at present being convinced by the consequences that attended, they readily admit of the operation, and are as industrious in giving it

* See a Dissertation on the Method of Inoculating the Small-pox, by J. C. M. D.

due recommendation as any others.* The Italians also, being apprized of the method and success consequent upon it, constantly employ an operator in an epidemical season; and to come nearer home, I have had it very well attested to me, that a certain gentleman of this city, had the operation performed upon two of his children this last winter, and that his expectations were fully answered in the event."

To whom the Doctor alludes in this last assertion I have not been able to discover, and as the fact is not noticed by any other person, it may be regarded as an unfounded report. Indeed, in the whole of this citation, the

* There is certainly no foundation for this assertion.—

“ Dans toutes les familles, les parens se font scrupule d’inoculer leurs enfans. Cette pratique si sage—n’est pas adoptée dans les Etats du Grand Seigneur que par les sujets Chrétiens.”—

Tableau general de L’Empire Othoman. Par M. De M. . D’Ohsson. vol. ii p. 224.

author

author seems to indulge himself in the pious fraud of thinking, that no sacrifice can be too great when made in support of a good cause. Not many weeks after this pamphlet appeared, Dr. Harris published his lecture, read before the College of Physicians of London,^y in which he not only states the Byzantine method of inoculating the Small-pox, but also the mode employed for this purpose by the Chinese. However, the method of the latter, of introducing the cotton charged with variolous matter into the nostrils, he considers as less safe. Dr. Harris is the first, who mentions the manner of inoculating by a thread imbued with the variolous pus, as successfully practised upon four children of the French consul at Aleppo, when secretary to the Marquis de Chateauneuf, at

^y *De peste dissertatio habita Apr. 17. 1721. in amphitheatro collegii regalis medicorum Londinensium, cui accessit descriptio inoculationis variolarum à Gault. Harris ejusdem collegii socio & chirurgiæ ibidem professore, 1721.*

Constantinople. In these children punctures, or rather scratches, were made on the forehead, cheeks, chin, and in both wrists and feet, deep enough to draw a few drops of blood: the operator then took a thread, moistened with variolous matter, with which he rubbed the punctures for a sufficient time to communicate the infection. It may be remarked, however, that Dr. H. condemns the performance of the operation in the face, and says, that it was the fanciful invention of an old Christian woman, who in allusion to the holy cross, superstitiously imagined that such a plan would be the most successful; but he observes, that this superstition is now done away, and that an insertion of the matter into one or two places in the leg or arm, is found to be sufficient.

This simplification of the mode of inoculation is to be considered as the first improvement which the art underwent at Constantinople; and

and from the inaugural dissertation of Dr. Le Duc,^z we are enabled to discover some of the circumstances which seem to have led to it.— Dr. Le Duc, who was inoculated at Constantinople by the famous Theſſalian woman, who first introduced the practice into that city, and successfully exercised it upon many thousands, says, that this crafty woman, with a view to manifest her great importance, pretended that the art of inoculation was revealed to her by the Holy Virgin, and was a secret which no consideration should induce her to disclose.— She not only made the incisions of a crucial form, in eight different parts of the skin, as before mentioned, but in a low voice implored the assistance of the Blessed Virgin, and required an oblation of two wax candles, which she promised to send into Theſſaly, to be lighted before the altar of her patroness.

^z Vide *Dissertationes in novam, tutam ac utilem methodum inoculationis, seu transplantationem variolarum.*

For a long time this assumed piety, and pretended inspiration of the old woman, had the desired effect with the credulous and illiterate; but when her practice extended among the noble Greek families, who knew that inoculation was practised by many others in that part of Greece from whence she came, her pretence to any peculiar secret was found to be a gross imposition: the process was soon divested of all mystery and ceremony; and, by being better understood, it was afterwards considerably improved at Constantinople.— Hence, on comparing the various accounts of inoculation, as practised at different times in that city, it appears that the mode of performing the operation gradually became more and more simple. Thus we learn, from Pylarini, that in 1701, incisions were made in the forehead, cheeks, chin, and also in the extremities, for the purpose of inoculation; while Timoni,

twelve years afterwards, says, the operator is to make several little wounds in one or more places of the skin, and these succeed best in the fleshy parts of the arm. The former likewise says, that the patients are to be confined to a vegetable diet for forty, but the latter only for twenty or twenty-five days. In the year 1717, the insertion of variolous matter at a simple puncture in each arm, seems to have been the prevailing method of inoculation, as will appear by the following relation:—Mr. Maitland, Surgeon to the Honourable Wortley Montague in his diplomatic character at the Ottoman court, informs us, that the ambaffador's lady, being convinced of the advantages of inoculation, determined that her only son, then six years of age, should undergo the operation. For this purpose she desired Mr. Maitland to procure the variolous matter from a proper subject, which being done,

done, an old Greek woman, many years in the constant habit of inoculating, was employed to insert it. "But," says Mr. M. "the good woman went to work so awkwardly, and by the shaking of her hand put the child to so much torture with her blunt and rusty needle, that I pitied his cries, and therefore inoculated the *other arm* with my own instrument, and with so little pain to him, that he did not in the least complain of it." ^a The consequent disease was very mild, there being only about one hundred pustules; and it may be remarked, that this inoculation, which was performed at Pera, near Constantinople, in the month of March, 1717 (if the mode of buying the Small-pox be excepted) was the first ever practised upon any English subject.

Having now stated all the principal facts which immediately led to the establishment of

^a *Mr. Maitland's Account of Inoculating the Small Pox, p. 7.*

the Byzantine method of practice in this country, I proceed to relate the progress of Inoculation under the conduct of men educated in the medical profession.

SECTION III.

SECTION III.

Of the introduction of Inoculation into regular practice in this country, and in America, with the circumstances attending its progress here during the years 1721 & 1722.

INOCULATION of the Small-pox was first regularly adopted in England in the month of April, 1721; and it was owing to the enlightened and philosophic mind of Lady Mary Wortley Montague, that Great Britain had the honour so early to take the lead in rescuing this useful practice from the hands of the ignorant, and placing it under the direction

of professional skill. For after this celebrated lady had witnessed the good effects of inoculation upon her son at Pera, she determined also to try it upon her daughter,* then an infant of three months old; but for certain domestic reasons the operation was at that time deferred, so that this child was fortunately reserved to be the first example of inoculation in England. The particulars of the case are stated by Mr. Maitland in the following manner:—“ This noble lady sent for me last April, and when I came, she told me she was now resolved to have her daughter inoculated, and desired me forthwith to find out matter for the purpose. I pleaded for the delay of a week or two, the weather being then cold and wet; for indeed I was unwilling to venture on an experiment altogether

* She was married to the Earl of Bute in 1736, and died in her 77th year, November 5th, 1794.

new and uncommon here, in a cold season: though I am now convinced it may with due care be practised at all times and seasons, but still with more safety in the temperate and favourable. I also pray'd, that any two physicians, whom they thought fit, might be called, not only to consult the health and safety of the child, but likewise to be eye-witnesses of the practice, and contribute to the credit and reputation of it. This, indeed, was at first deny'd me, it may be, out of design to keep it a secret, or least it should come to nothing. In the mean time, having found proper matter, I ingrafted it in both arms, after the usual manner; the child was neither blooded nor purg'd before, nor indeed was it necessary, considering the clean habit of body, and the very cool regular diet she had ever been kept to from her infancy. She continued easie and well, without any sensible alteration, bateing

the usual little spots and flushings till the tenth night, when she was observed to be a little hot and feverish. An ancient apothecary in the neighbourhood being then called, prudently advis'd not to give the child any medicine, assuring them there was no danger, and that the heat would quickly abate, which accordingly it did; and the Small-pox began next morning to appear, which was indeed some two days later than usual, by reason of the uncommon discharge of matter at the incisions from the beginning. Three learned physicians of the College were admitted, one after another, to visit the young lady; they are all gentlemen of honour, and will, on all occasions declare, as they have hitherto done, that they saw Miss Wortley playing about the room, chearful and well, with the Small-pox raised upon her; and that in a few days after she perfectly recovered of them. Several ladies

ladies and other persons of distinction, visited also this young patient, and can attest the truth of this fact.”

The very favourable event of this first trial of the Byzantine mode of inoculation in Britain, and also that of a second made on the son of Dr. Keith,^a which immediately followed, was soon generally known in London, and consequently communicated to the different parts of the kingdom. For an art so new and interesting to the public, could not fail to excite the attention of people of all ranks, and more especially those of the medical pro-

^a See Sir Hans Sloane's MSS. preserved in the British Museum.—Also Dr. Douglass's Essay on the Small-pox. p. 67.

Mr. Maitland does not mention the name; but says, on the 11th May he inoculated the son of one of the learned physicians, who visited Miss Wortley. Condamine Kirkpatrick, and succeeding writers, have fallen into the mistake of stating Sir John Shadwell's son as the second person inoculated by Mr. M,

Jefferson,

feſſion, on whoſe concurrent opinions the eſta bliſhment of this foreign practice here, was ultimately to depend. However, though theſe proſperous inſtances of inoculation had hitherto confirmed the reports of its ſucceſs at Conſtantinople; and though the practice had been introduced among the Engliſh by a woman who, from her brilliant accompliſhments, maſculine underſtanding, and great influence in the fashionable circles, was above all others moſt likely to be followed as an example in the metropolis; yet this valuable art was ſtill regarded with a ſuſpicious caution, and ſeveral months elapſed before a third trial of it was made in London. It is therefore highly probable, had it not been for the uncommon fortitude of Lady Mary Wortley Montague, to whom the Virgilian compliment of *Dux ſæmina Façti* has been juſtly transferred, that the æra of the commencement of

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of inoculation in this country would have been much later than that here stated.^b

Many physicians, on the supposition that this new practice originated with ignorant old women, held it in the utmost contempt; others again, from not being able to discover any reason why the Small-pox by inoculation, should be, under the same circumstances, milder than that disease is when casually produced, discredited the fact; while those who, on the testimonies of its success in distant countries, believed in the advantages it afforded, did not yet think themselves suf-

^b Writers have universally erred in dating this event in April, 1722, and making it subsequent to the inoculation of the malefactors at Newgate. Now Mr. Maitland's pamphlet, in which all the circumstances are stated, was published in Feb. 1722, as appears by the advertisement prefixed to the work. Therefore Mr. M. in saying April *last*, could mean no other than that in the year 1721. Besides, Mr. M. expressly tells us, that this child was the first example of inoculation in England.

ficiently warranted to recommend it to the families they attended.

Hence, four months after the inoculation of Miss Wortley, this practice was still viewed in such a dangerous light, that it was determined that several culprits, then in Newgate, who had forfeited their lives to the laws of their country, should, on submitting to be inoculated, receive full pardon by the royal prerogative; a proposition which is said by some to have been suggested by the College of Physicians to their Royal Highnesses the Prince and Princess of Wales; but Sir Hans Sloane states it to have wholly originated with the Princess of Wales. For the Princess Anne, afterwards Princess Royal of Orange, falling ill of the Small-pox, in such a dangerous way that Sir Hans Sloane thought her recovery very doubtful, “Queen Caroline, when Princess of Wales, to secure her other children, and for
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the common good, begged the lives of six condemned criminals, who had not had the Small-pox, in order to try the experiment of inoculation upon them.”^c

Mr. Maitland was accordingly requested to perform the operation, which he declined; but lest the opportunity should be lost, Sir Hans wrote to Dr. Terry, at Enfield, who had practised physic in Turkey, to know his opinion concerning inoculation. The Doctor replied, that he had seen the practice there among the Greeks encouraged by the patriarchs, and that not one in eight hundred had died in consequence of the operation. Upon which Mr. Maitland undertook to inoculate the following six criminals at Newgate, on the ninth day of August, 1721, in the presence of several eminent physicians and surgeons.

^c *An Account of Inoculation by Sir Hans Sloane, Bart. given to Mr. Ranby for publication in the year 1736. See Phil. Transf. vol. 49. p. 516.*

Mary North,	-	36 years old
Ann Tompion	-	25
Elizabeth Harrifon,		19
John Cawthery,		25
John Alcock,	-	20
Richard Evans	-	19

All these fix, who were inoculated by making incisions in both arms, and on the right leg, obtained a remission of the sentence of the law on very easy terms; for in Alcock, on whom the operation produced the greatest crop of pustules, the number did not exceed sixty; and Evans, having had the Small-pox the preceding year, of course did not receive the disease a second time. A seventh criminal, who also, on the same condition, availed herself of this favourable opportunity of arresting the execution of the law, was a young woman, on whom Dr. Mead chose to try the Chinese method

method of communicating the Small-pox: he therefore caused some cotton, moistened with variolous matter, to be inserted within her nostrils; and this also had the effect of producing the distemper in a mild way: but the patient suffered much by severe pains in her head, from the commencement of the eruptive symptoms till the maturation of the pustules.

These experiments, no doubt, tended much to the encouragement of inoculation, which in so many instances had now fully answered the utmost expectations of its patrons. The trials of it, however, were justly considered as still too few to ascertain the general safety and advantage of the practice. Add to this, that the variolous pustules produced on the culprits being few and transitory, several physicians contended that inoculation had not communicated the genuine Small-pox, and that the inoculated were still liable to the distemper in

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the casual way;^d so that during the following six months Mr. Maitland inoculated only eight persons. The first was Mary Batt, two years old, the daughter of a Quaker, then residing at Temple, three miles distant from Hertford, who was inoculated Oct. the 2d, 1721. This child, having only 20 pustules, soon recovered, "But," says Mr. M. "what happened afterwards was, I must own, not a little surprising to me, not having seen or observed any thing like it before. The case was in short this: Six of Mr. Batt's domestic servants, who all in turns were wont to hug and caress this child whilst under the operation, and the

^d Hence Sir Hans Sloane says, "D. Steigertahl, Physician to the late King, and I, joined our purses to pay one of those who had been inoculated in Newgate, to go to Hertford, where the disease, in the natural way, was epidemical, and very mortal, and where this person nursed and lay in bed with one who had it, without receiving any new infection." *Phil. Transf. vol. 49. p. 517.*

pustules were out upon her, never suspecting them to be catching, nor indeed did I, were all seized at once with the right natural Small-pox, of several and very different kinds."

The other seven inoculated by Mr. M. were, two sons of William Heath, at Hertford, October 12th—an infant daughter of Mr. Hughes, Judge Advocate General of His Majesty's Forces, November 17th—a boy and girl in Clement's-lane, the children of Mr. Colt, December 17th—and on January 13th, 1722, a third child of Mr. Colt's. All these perfectly recovered; though it must not be concealed, that two of the children had the Small-pox so severely as to be thought some time in considerable danger.

Mr. Maitland's *Account of Inoculating the Small-pox*, which was published in February, 1722, and from which I have been enabled to give the preceding sketch of the introduc-

tion of the art, was immediately followed by the publication of a letter upon the same subject, written by Dr. Nettleton,^c who, at Halifax, in Yorkshire, during December 1721, and the two subsequent months, inoculated with success upwards of forty persons, which was more than double the number of those then inoculated by Mr. Maitland. This letter, in which Dr. N. has given a faithful and candid statement of his practice of inoculation in that town, influenced the public very considerably in favour of the new mode of communicating the Small-pox, and therefore claims particular notice. Dr. Nettleton informs us, that what was done to the patients, by way of preparation, was chiefly purging with rhubarb for children, and sometimes vomiting, very rarely bleeding; and that many were inoculated without taking

An account of the success of inoculating the Small-pox: in a letter to Dr. William Whitaker, dated Halifax, April 3d, 1722.

any preparatory measures whatever. But he observes, that in those to whom emetics were exhibited, the symptoms were milder than with the others. His method of performing inoculation was to make two incisions, one in the arm, and the other in the leg of the opposite side; and to infil into these wounds two or three drops of variolous matter. This was the mode he first adopted; but afterwards finding that the smallest particle of matter was sufficient to communicate the infection, he charged a little cotton with variolous pus, and confined it to the incisions for twenty-four hours by means of a plaster; these applications were then removed, and the inoculated part defended from the air by a simple linen roller. The incisions were made deep enough to penetrate through the skin, and in adults three quarters of an inch in length. The reason for making them thus large, was

to secure a more plentiful discharge of matter from them, a circumstance which he constantly found to mitigate all the symptoms.

“The persons inoculated,” he says, “have not been confined to any regimen, only to keep themselves moderately warm; and to those who were grown up, to live very temperate and regular, to keep their minds easy and composed, and to use proper means to drive away all fear and concern. Some have been obliged, from the time of the inoculation, to abstain from flesh, and all strong liquors; but I found afterwards, that the eruption did not proceed so well when they were obliged to live too low. Perhaps, in warmer climates, where they are not so much accustomed to live upon flesh, such abstinence may be necessary; but here I find it best to let them eat and drink as usual, though sometimes more sparingly, till the fever begins to rise, and then,

then, and not before, we enjoin such a regimen as is usual in like cases."——“ I very rarely saw occasion for any medicines in the course of the distemper; only sometimes, when the symptoms run very high, I gave a gentle anodyne, to be repeated as occasion should require; and once or twice I thought it necessary to blister. After the Small-pox is gone, they have always been purged twice or thrice, and sometimes let blood, which is all that has been usually done.”

Of all the cases of inoculation, related by Dr. Nettleton, there is only one to which it seems necessary here to advert; and as this was afterwards urged to discredit the practice, it shall be fully stated in the words of the author:—“ The eighth and ninth cases were in a family where they had four children, none of whom had had the Small-pox. I was called to the eldest, who was

seized in the common way, with the most malignant sort I ever saw, attended with the worst symptoms that could be; so that he dy'd on the fourth day, all full of purple and livid spots. The parents were very desirous that any means might be used to preserve the rest; but here I was in great doubt and perplexity what part to act. I knew very well, that if I should venture to make the *incision*, whatever should happen would be charged upon that; and it was not improbable but some of them might have already taken the infection, in which case it was very uncertain what the event might be. On the other hand, if it was omitted, I thought it probable they might all die; the contagion got amongst them being of such a destructive nature. Wherefore I was willing to run the risque of my reputation rather than that the children should all perish. They were therefore all
three

three inoculated the day before the eldest died, after having told the parents that I could not answer for the consequence, in case they had already caught the infection, which would be known if any of them fell ill before the seventh day. Accordingly, as we feared, one of them began on the second day, much after the same manner with the eldest; and the Small-pox came out on the third day, or rather a universal redness all over the skin, interspersed with many purple spots. There were none of these spots near the places of incision, which began to swell a little (as usual) about the fourth day, and the Small-pox did rise a little more about those places than elsewhere. But nature was too much oppressed with the violence of the distemper; and though she continued longer than her brother, and was not delirious as he was, yet she died on the seventh day. I did not reckon this child in

the number of those who received the Small-pox by inoculation; for I thought there was sufficient reason to conclude, that she had taken the infection before: but of this we must leave all persons to judge as they please; I only give you a relation of facts.”

Early in the spring of the year 1722, inoculation began to be adopted in various parts of England; and by order of her Royal Highness the Princess of Wales, it was practised first upon six, and afterwards upon five, charity children, belonging to the parish of Saint James's. The success with which these trials were attended, induced her Royal Highness to cause Princess Amelia and Princess Carolina to be inoculated on the 19th of April, 1722;^f the former being then eleven and the latter nine years of age. They were inoculated by Serjeant Surgeon Amyand, under the direc-

^f See *Historical Register* for the year 1722.

tion of Sir Hans Sloane: but before her Royal Highness determined upon the inoculation of the Princesses, she consulted Sir Hans respecting the propriety and safety of the measure. He "told her Royal Highness, that by what appeared in the several essays, it seemed to be a method to secure people from the great dangers attending the Small-pox in the natural way. That the preparations by diet, and necessary precautions taken, made that practice very desirable; but that not being certain of the consequences which might happen, he would not persuade nor advise the making trials upon patients of such importance to the public." The Princess then asked him if he would dissuade her from it: to which he answered, he would not in a matter so likely to be of such advantage. Her reply was, that she was then resolved it should be done; and ordered Sir Hans to go to the King (George the

the First) who had commanded the Doctor to wait on him upon that occasion. Sir Hans then told his Majesty, “ that it was impossible to be certain, but that on raising such a commotion in the blood, there might happen dangerous accidents not foreseen.” To this the king replied, “ that such might and had happened to persons, who had lost their lives by bleeding in a pleurisy, and taking physic in any distemper, let ever so much care be taken.” In this opinion Sir Hans coincided with his Majesty, and the two Princesses were inoculated.^s

Both these younger branches of the Royal Family passed through the Small-pox in a very favourable manner: and inoculation, in consequence of this illustrious example, was now making a rapid progress; when, unfortunately, the practice received a very considerable check, by the death of the Honourable Wm.

^s *Phil. Transf. vol. 49. p. 518.*

Spencer, son of the Earl of Sunderland; and also by that of the butler of Lord Bathurst: both of whom were inoculated in this month, and died under the Small-pox.

The Earl of Sunderland's son, who was about three years old, was inoculated in London by Mr. Maitland, April 2d, 1722, and died on the 21st of the same month.—According to Mr. Maitland, the eruption appeared on the ninth day; “he had a fair and full eruption of pustules of different sorts, observing the common periods and symptoms of inoculation; and after the greatest part of the pustules were dried off, he was seized on the twenty-first day with a convulsive fit, of which he died.”^h

Lord Bathurst's servant, aged nineteen, was inoculated immediately after his recovery from

^h See Dr. Jurin's *Account of the success of inoculating the Small-pox in 1721, 1722, and in 1723.* p. 19.

an inflammatory fever, April 30th, 1722, by Serjeant Amyand. The variolous pustules appeared on the ninth day after inoculation, “of the favourable distinct kind, whereby his complaints were allayed; but the fever returning the next day with bilious vomitings, frequent stools, and a delirium, a great many of the confluent sort then appeared, and he died on the seventh day from the eruption.” He was attended by Dr. Arbuthnot and Dr. Mead.ⁱ

These are the two deaths to which Dr. Jurin alludes in his letter to Dr. Cotesworth, dated February, 1723, when the number of persons inoculated in England amounted to 182, viz.

ⁱ Jurin, l. c.

By Dr. Nettleton, - - - - -	61
Claud. Amyand, Esq. Serjeant Surgeon,	17
Mr. Maitland, Surgeon, - - - -	57
Dr. Dover, - - - - -	4
Mr. Weymish, Surgeon, - - - -	3
The Rev. Mr. Johnson, - - - -	3
	<hr/>
In or near London,	145
Dr. Brady, at Portsmouth, - - -	4
Mr. Smith, Surgeon, and Mr. Dymer,	} 13
Apothecary, at Chichester,	
Mr. Waller, Apothecary, at Gosport,	3
A Woman, at Leicester, - - - -	8
Dr. Williams, at Haverford-West, -	6
Two other persons near the same place,	2
Dr. French, at Bristol, - - - -	1
	<hr/>
In all -	182
	<hr/>

“ Out of this number (says Dr. Jurin),
the opposers of inoculation affirm, that two
persons

persons died of the inoculated Small-pox; the favourers of this practice maintain, that their death was occasioned by other causes. If, to avoid dispute, these two be allowed to have died of inoculation, we must estimate the hazard of dying of the inoculated Small-pox, as far as can be collected from our own experience to be that of two out of 182, or one out of 91." But Dr. Jurin, at this time, omits to notice a third death caused by inoculation, which occurred in the year 1722. The patient was Miss Rigby, who in consequence of an abscess formed in her arm died hectic about eight weeks after inoculation. She was inoculated by Mr. Maitland, in London, April 29th, 1722. Thus it is very remarkable, that the three first persons in England, whose deaths were ascribed to inoculation, were all inoculated in the same month. Therefore, out of 182 inoculations, during
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the years 1721 and 1722; three died; or nearly one in sixty.

About the same time that the first death happened by inoculation in London, various accounts were received in town, stating that this new practice had been carried to a much greater extent in New England; and the consequences attending it were very differently represented, according to the views and prejudices of the persons from whom the information was received.

It appears that the Small-pox, after an absence of nineteen years, visited New England, in 1721; and, in the month of April, became very mortal at Boston; which induced the Rev. Mr. Mather to publish the account of inoculation as related in the Philosophical Transactions, by Timoni and Pylarini. This publication, which was distributed to all the medical practitioners at that place, was the
means

means of inciting Dr. Boylston^k to commence the practice of inoculation upon his own child, and upon two of his negro servants, in the latter end of June, 1721; and in the course of six months afterwards he inoculated at Boston, and in the neighbourhood of that town, 244 persons. He first performed the operation according to the mode described by Timoni; but he says, “the Turkey way of scarifying and applying the nut-shell, &c. I soon left off, and made an incision through the true skin, and applied a plaister over it; which I found since to be the better way.”

Of the above number inoculated by Dr. Boylston, six died under the process. The first was Mrs. Dixwell, aged thirty-seven, described as a fat woman, and of a tender

^k *An historical account of the Small-pox inoculated in New England, upon all sorts of persons, Whites, Blacks, and of all ages and constitutions, &c.* by Zabdiel Boylston, physician, 1726.

constitution.

constitution. She was inoculated the 30th of August, 1721. The pustules appeared on the ninth day, and though numerous, were of the distinct kind; but on the seventh day of the eruption they became confluent on the face; on the thirteenth they began to dry; and on the following day to fall off: the weather then being very cold, she was seized with hysteric fits, which were in some measure relieved by opiates; however, the next evening the paroxysms returned, with an increase of fever, and she died on the seventeenth day of the eruption.

The second person who died under the inoculated Small-pox, was John White, Esq. aged fifty-two, and represented as a man of a weak sickly constitution. He was inoculated the 21st of November, 1721: the pustules first appeared on the ninth day, and on the eleventh they were very numerous, though

not in the least confluent: but after that time the eruption advanced very slowly; the patient also became hypochondriacal, and refused to take any nourishment. "Thus," (says the inoculator) "he lay languishing and withering away like a plant without moisture," (the pock not ripe, and of a livid colour) "until the twelfth day of the eruption," when he expired.

The third person whom Dr. Boylston lost under inoculation, was "the Indian girl," aged seventeen, inoculated the 29th of November, 1721. In this case the eruptive symptoms commenced about the seventh day, with a gentle fever, which continued till the ninth, "when," says Dr. B. "the Smallpox came out, of a kind distinct fort, she having about twenty on her face; so she was easy, and laughed, as I found her half naked, and setting up in bed. Next day (the tenth)

the Indian was very dull, and did not care to speak. I found her very ill; the pock sunk in; her pulse too frequent and uneven. I ordered her out of her cold apartment, near a fire, and many means were used to get the pock out, but to no purpose, for she died before morning."

Bethiah Scarborough, a widow, aged sixty-seven, inoculated the 26th of December, 1721, was the next person who died of the inoculated Small-pox. She began to complain on the seventh day, and on the ninth, the usual pain in her head and back, accompanied with fever, was severe, without any appearance of eruption; so that the Dr. says, "she had blisters ordered and other means prescribed to bring out the pocks, and that she should be kept warm in bed; and so I left her that night. The next night I found her (unexpectedly), in her clothes, upon the bed, faint, and weak, with

a faltering weak and dangerous pulse ; and the nurse told me her menses were upon her, and that she could not keep her in bed. I did the best I could for her (being late at night, and no shop at hand), but to no effect. She died before morning. She had been very sickly when a young woman, and never well. In short, through my great hurry, she was poorly doctored, and badly nursed, and so she died before the Small-pox came out."

Mrs. Wells, aged fifty-four, died in December, under inoculation, at Roxbury. The Doctor observes, " she was a very weakly gentlewoman, always complaining, of an ill habit of body, and so very splenetick as often to be deprived of reason, and many years not capable of managing her affairs. She had the Small-pox at the usual time, and a very distinct sort, and the symptoms continued moderate for the first five days, save that the cold weather
pinched

pinched her very much. The sixth, seventh, and eighth days, she was more uneasy, slept but little, grew faint and weaker; the cold weather affecting her still more, and the native heat declining a-pace; the pock not filling, she sunk under it, and died on the ninth day of the eruption."

Mrs. Serle, aged sixty-one, was inoculated at the same time as the foregoing patient. She was according to Dr. Boylston's account "an ailing woman, hysterical, splenetick, and of an ill habit of body. She had the Small-pox at the usual time, and of a very distinct sort. The symptoms were moderate, though she was often of one uneasiness or other, as is common in the Small-pox; and the cold weather likewise affected her much. Thus she continued until the pock filled and turned, and the scabs cast off, one day a little better, another day worse, sometimes up, and at other times in bed. The

perspirations being stopped by the cold weather, and a complication of humours being put in motion, at last fell upon her bowels; she had a purging three or four days, which carried her off. She died the twenty-fourth day after the eruption.”

These unsuccessful cases were not published by Dr. Boylston till some time after the event, and in the mean while they were variously stated by the advocates and the opposers of inoculation; I have therefore been the more desirous of relating each case in the words of the inoculator. To his narrative is subjoined an account of all the persons inoculated near Boston, from the 26th of June, 1721, till the latter end of January, 1722, as in the following table.

AGES.	Persons inoculated.	Had the Small-pox by inoculation.	Had an imperfect fort.	Had no effect.	Suspected to have died from inoculation.
From Nine Months to Two Years Old	6	6	0	0	0
Two to Five,	14	14	0	0	0
Five to Ten,	16	16	0	0	0
Ten to Fifteen,	29	29	0	0	0
Fifteen to Twenty,	51	51	0	0	1
Twenty to Thirty, .	62	60	0	2	1
Thirty to Forty, . .	44	42	0	2	1
Forty to Fifty,	8	7	0	1	0
Fifty to Sixty,	7	6	0	1	2
Sixty to Seventy, . .	7	7	0	0	1
Total	244	238	0	6	6
Inoculated by Drs. Roby & Thompson, in Roxbury & Cambridge,	36	36	0	0	0
Total	280	274	0	6	6

Before I dismiss Dr. Boylston's pamphlet, it may be proper to remark, that though this practitioner betrays great rashness and ignorance, yet he seems to have had discernment enough to discover, that the Small-pox, as casually received, is much longer in taking effect, than when communicated in the way of inoculation; and that the latter supercedes the former by four or five days. A discovery of which a more modern inoculator has taken the credit.

PREVIOUSLY to my farther investigation of the progress of Inoculation, it becomes necessary to take some notice of the opposition which it excited, and which was continued with much clamour throughout the year 1722. The objections then urged against inoculation, were both of a physical and moral nature, and gave rise to a controversy, in which men of various

various professions engaged. But as many of the objections, alleged by medical practitioners against the practice of inoculation, were founded upon casual and temporary circumstances, a recital of them now would be considered as wholly useless, and uninteresting. Mr. Maitland, however, had to encounter some accusations which it was not easy to repel. He had asserted, and his enemies did not fail to remind him of it, that inoculation, as practised at Constantinople, was a process which almost universally produced the Small-pox in its mildest form; insomuch that not one person in many thousands died under it: and he had entertained no doubt of experiencing the like success in England. But after a few trials of inoculation made here, the result proved widely different from his flattering promises. Three out of his first twelve patients under inoculation, had the
distemper

distemper in a very alarming and severe manner; and before he had inoculated as many more, two persons actually died in consequence of the operation. Mr. Maitland was therefore represented by some as selfish and designing, and by others as the ignorant and credulous dupe of the old women in Turkey. But a more direct proof of his ignorance was drawn from his confessing that he did not believe the inoculated Small-pox to be infectious, and from his suffering six of Mr. Batt's servants to fondle a child affected with this disease; in consequence of which they were all seized with the natural Small-pox, and one of them (a young woman) died:¹ Mr. Maitland was therefore accused of being the cause of her death. However, if this was an unpleasant fact to the first British inoculator, it was an instructive lesson in the practice of

¹ See page 97.

inoculation;

inoculation; and as many of his opponents then contended that the operation did not produce the genuine variolous pustules, it was brought forward as an argument to the contrary; *Nemo dat quod non habet.*

That inoculation did not constantly succeed in producing the distinct or favourable kind of Small-pox, was at that time, and still continues to be a melancholy truth. But the inoculators were at first unwilling to acknowledge it, and by attempting to attribute the death of persons inoculated, to other accidental causes, exposed themselves to just censure. On the other hand, the writers against inoculation pursued a conduct still more reprehensible. Instead of waiting to ascertain such facts as might have enabled them to form just conclusions on the advantages and disadvantages of this new art, they immediately proceeded to employ falsehood and invective; reproaching
the

the inoculators with the epithets of poisoners and murderers.

I shall first notice a pamphlet published about the middle of the year 1722, and entitled *The new practice of inoculation considered, and an humble application to the approaching parliament for the regulation of that dangerous experiment.* In this work, however, the anonymous author confines his humility wholly to the title page. He represents the death of Lord Sunderland's son, and the unfortunate cases of inoculation at Boston, in the most aggravated point of view; and declares this new practice to be founded in atheism, quackery, and avarice, which, to use the author's words, "push men to all the hellish practices imaginable; men murder fathers, mothers, relations, and innocent children, and any that stand in the way of their wicked desires."— He adds, "While this hellish principle has so
much

much hold upon mankind, 'tis highly necessary that there should be no doors left open for the practice, at least none that can be shut; that there should be no room for the covering of such horrid things from the reach of the law. Physicians they have already too much latitude in practice, to make havoc of mankind for the satisfaction of their judgment in physic, and increase of their experience; but every quack now may be a hireling to the devil, and, like that banditti in Italy, be ready to do the drudgery of removing heirs, and other obstructing incumbents of many kinds; and to do this under the mask of a cure, inoculating death instead of a disease, and making use of an art never before practised, in a manner not foreseen, and by the laws not yet sufficiently guarded against." ^m

^m See page 36.

The Rev. Mr. Maffey, in a sermon, preached at St. Andrew's, Holborn,ⁿ "against the dangerous and sinful practice of inoculation," treated the inoculators with the most unqualified abuse, calling them diabolical forcerers, hellish venefici, enemies of mankind, and hoped they would be distinguished from those of the faculty who deserve honour, and not be permitted to mingle with them, as the devil among the sons of God. He considers inoculation as a very ancient art, and first put in practice upon Job by the "devil, who, by some venomous infusion into the body of Job, might raise his blood to such a ferment, as threw out a confluence of inflammatory pustules all over him from head to foot; that is, his distemper might be what is now

ⁿ On Sunday, July 8th, 1722. His text was:—"So went Satan forth from the presence of the Lord, and smote Job with sore boils, from the sole of his foot unto his crown." 111*b* chap. verse 18.

incident to most men, and perhaps conveyed to him by some such way as that of inoculation." Thus we are to understand, that the devil was the first inoculator, and poor Job his first patient.* Hence he terms inoculation "a diabolical operation, and an antiprovidential project, that insults our religion, and banishes Providence out of the world." But the intemperate zeal of the preacher does not stop here; it not only hurries him into numerous and palpable inconsistencies, but also to gross misrepresentations of facts: for he roundly asserts, that "the confessed miscarriages in this new method (of inoculation), are more than have happened in the ordinary way."

* This conceit of the Rev. Divine gave rise to the following epigram, published in the Monthly Miscellany for March, 1774.

We're told, by one of the black robe,
The Devil inoculated *Job*.
Suppose 'tis true, what he does tell,
Pray, neighbours, did not *Job* do well?

This

This assertion, had it been true, would of itself have been sufficiently conclusive, and have effectually silenced the advocates for inoculation. However, at all events, the learned divine determines to give them no quarter on any side; for he says, "Could these bold practitioners lessen the severity of the disease, could they entirely secure men from danger under it, I do not see what mankind would get in the main; since it would be the occasion of their running into a great many dangers."

But the most redoubted champion who at this time appealed to the public against inoculation, was Dr. Wagstaffe, a man of extensive professional practice; and as a fellow of the College, and Physician to St. Bartholomew's Hospital, he could not fail to influence the minds of many to a considerable degree; more especially as his "*Letter, shewing the danger*"

danger and uncertainty of inoculating the Small-pox," was addressed to the learned Dr. Freind. In this letter Dr. Wagstaffe takes a very comprehensive view of the subject; and as he concludes with a recapitulation of his objections to inoculation, I am thereby enabled to give them as stated by himself. "Now, sir, I have recounted, I believe, most of the inconveniences arising from this experiment; I have observed that it may differ from itself as practised in another climate; that it is not agreeable to reason, that the positions of the favourers of inoculation are false, and their practices as precarious; that some have had the distemper not at all, others to a small degree, others the worst sort, and that some have died of it. I have given instances of those who have had it after inoculation in the common way, and consequently as it is hazardous, so 'twill neither answer the main

design of preventing the distemper for the future. I have considered what the effects may be of inoculating on an ill habit of body, and how destructive it may prove to spread a distemper that is contagious; and how widely at length the authors in this subject disagree among themselves, and how little they have seen of the practice; all which seem to me to be just and necessary consequences of these new-fangled notions, as well as convincing reasons for the disuse of the practice."

Of the other writings, which now appeared against inoculation, I trust it will be unnecessary to take notice, as they contain little more than unfounded conjectures, on the practice, with fanciful conceits concerning its effects; and supply the place of arguments with the utmost obloquy and abuse of Dr. Nettleton and Mr. Maitland. Mr. Sparham, a surgeon, carried his illiberality so far as to in-

finuate

finuate that Dr. Nettleton's account was a mere contrivance to serve the purpose of the inoculators in London. These are his words:—
 “Whoever Nettleton and Whitaker are, shall not be our inquiry now; or whether the book, subscribed Nettleton to Whitaker, was not a contrivance here in town, under those names, to spread the practice.”^p

The numerous attacks upon Mr. Maitland, and the other inoculators, produced various replies, especially to Dr. Wagstaffe and to Mr. Maffey. The chief of them were by Dr. Crawford,^q Dr. Brady,^r Dr. Williams, Dr. Slare,^s and Mr. Maitland, or rather Dr. Arbuth-

^p *Reasons against the practice of inoculating the Small-pox, by Legard Sparham, Surgeon. See Postscript.*

^q *The case of inoculating the Small-pox considered, and its advantages asserted, in a review of Dr. Wagstaffe's Letter, by J. Crawford, M. D.*

^r *Some remarks upon Dr. Wagstaffe's Letter and Mr. Maffey's Sermon against inoculation, by Samuel Brady, M. D.*

^s *Some remarks on Dr. Wagstaffe's letter, by Perrott Williams, M. D. With an appendix in favour of inoculation, by F. Slare, M. D.*

not,¹ who is said to have written Maitland's Vindication; and the subject was pushed forward so warmly, that even rejoinders to these were published before the termination of the year 1722.

I shall be readily excused from following the above disputants, through the extraneous and multiplied points of controversy with which they indulged themselves, and have no doubt but that, both as to the manner and matter of their arguments, a single example will be deemed sufficient. Dr. Wagstaffe having asserted, "It never came into men's heads to take the work out of nature's hands, and raise distempers by art in the human body."² Received the following reply in Maitland's Vindication, "That the practice

¹ *Mr. Maitland's account of inoculating the Small-pox vindicated from Dr. Wagstaffe's misrepresentations of that practice, with some remarks on Mr. Maffey's sermon.*

² See page 13.

of physick is founded upon the principle of curing *natural* by raising *artificial diseases*. What is bleeding, but an artificial hæmorrhagy; purging, but raising an artificial diarrhœa? Are not blisters, issues, and feavons, artificial imposthumations?"^w On this Mr. Isaac Maffey, apothecary, calls out, "Very good, sir; but go on:—What is correction at the cart's tail, but the noble art of muscular phlebotomy?—What is burning in the hand, but the art of applying a caustic?—What is hanging, but an artificial quinsy, which makes the patient feel for the ground, and chokes him?—What is breaking on the wheel, but the art of making dislocations and fractures, and differs from the wounds and amputations of surgeons only by the manner and intention?"^x

^w See page 8.

^x *A short and plain account of inoculation, with some remarks, &c.—p. 19.*

One of the rumours spread with a view to prejudice the public against inoculation was, that this art seldom produced the genuine Small-pox, and therefore would not secure the inoculated from the effects of variolous infection in the natural way. Mr. Tanner, surgeon to St. Thomas's Hospital, declared that he inoculated a person who had undergone the casual Small-pox several years before, and the effect of the operation was a discharge from the incisions and irregular eruptions; appearances which the inoculators, in the experiments at Newgate, had deemed sufficient to prevent the patients having the Small-pox in future.^y This account which seems unfairly represented, was by Mr. Maitland, who

^y This was related by Mr. Tanner to Sir Richard Blackmore, who took an active part in reprobating inoculation. See Blackmore's *treatise on the Small-pox*, p. 92. Dr. Wagstaffe, speaking of this experiment, says, the "*pimples appeared on him rather more fairly than on those of Newgate.*"

saw the case, positively contradicted, and was also counterbalanced by a certificate, stating that Elizabeth Harrison, one of the women inoculated at Newgate, had acted as nurse to several under the natural Small-pox, and had even slept in the same bed with a boy ill of this disease, without being again infected.²

Another report was, that a son of Lord Percival, after having had the inoculated Small-pox, was seized with the disease in the accidental way: but the eruption, upon further examination, proved to be the chicken-pox.³

Miss Degrave's case was also adduced as an instance of the inefficacy of inoculation. This young lady was inoculated February the 23d, 1722, without having any eruption; but she had frequent flushings in the face, which were sometimes attended with head-achs, a quick

² See *Maitland's Account*. p. 33.

³ Jurin's account for the year 1725.

pulse, and a purulent discharge from the inoculated parts, though not in a considerable degree. She was discharged from her confinement on the 17th of March; but continued in an imperfect state of health for several months; after which it was said many variolous pustules appeared upon her, but without previous sickness; and when these went off, she was restored to the enjoyment of good health.^b

Master Gough's case was likewise related very unfavourably to the credit of inoculation: but the true state of it was as follows: "On the seventh day after inoculation, he was indisposed with a feverish heat: the next day small pimples appeared as usual in the coming out of the Small-pox, and continued to increase till the day following, when he had

^b See Mr. Degrave's letter in "*Maitland's Vindication.*"

two or three loose stools, and the eruptions disappeared. The 12th the eruptions appeared again, but went off the next day." As he continued well till the eighteenth day, Mr. Johnson, the inoculator, declared there was nothing further to be apprehended from the Small-pox. In this he was mistaken, for on the 9th of June he had a distinct crop of variolous pustules, which passed through all the regular stages, and proved very favourable.^c

Dr. Clinch, who published this case with many misrepresentations, also stated another, which for some time excited great alarm among the inoculators. It seems that a Mr. Jones, surgeon at Oswestry, had, in a letter to his son in London, declared that he inoculated his daughter on the 9th day of August, and "that in less than a fortnight, the pimples of

^c Dr. Jurin's account of inoculation for the year 1725.

the Small-pox did appear so full and so well as if the distemper had been received in the natural way, without any sickness at all; and great rejoicing there was. But about three weeks after, the child fell sick again, but no mention of the Small-pox, but praising God that it was past; but it proved to be the Small-pox, and as thick as ever was seen upon a child. But praises be to God, the child recovered of it; and, I think, there are but few that will be so bold as to think they can act contrary to nature, to do any thing to perfection."^d

The contents of the above letter, which Dr. Clinch, in *an appendix to prove that inoculation is no security from the natural Small-pox*, represented as true, were found afterwards to be wholly false, and written with a premeditated

^d Dr. Clinch's *Historical Essay on the Rise and Progress of the Small-pox*.

design of imposition, as Mr. Jones himself acknowledged.*

In

* This will appear by the following curious letter to Dr. Jurin:

‘ SIR,

‘ **H**Aveing considered vpon the Affaires of your Desire and
 ‘ cannot find my Self Able nor Capable to giue you Tru
 ‘ Account of the Inoculation of the Small-Pox, nor am Soe
 ‘ well Instructed in the Art to Explain the Terminations to be
 ‘ publish’d, nor neuer did Designe or Desire it: but what I
 ‘ write was to my Son being he sent to me to Know my oppi-
 ‘ nion of the Inoculation: being his children have not had the
 ‘ Small-Pox Then: and being it was to him in a Way of Pre-
 ‘ swation, may be there is Some thing in the Letter more then
 ‘ all Truth: and all the Account That Euer I gaue was to him
 ‘ and noe Man Els: but neuer did I Design or Desire to make
 ‘ any Thing publick that was in it: how it came to you I
 ‘ cannot Tell: I am Sure it did not come vpon my Account:
 ‘ to Any man alive but to my owne Son and not to him to
 ‘ make A publick Game of it: but he Shall Loose more by it
 ‘ Then euer he can gaine by Them that he gave Account of
 ‘ it. but what foollish fancy that was in his head I cannot Tell:
 ‘ If I had any Thing that was worth the publishing I Should
 ‘ write It Downe with my owne hand and Wittness to It. and
 ‘ Derection to you or Some other gentlemen for to giue There
 ‘ Assistance to publish it but, as for Really Inoculation I can-
 ‘ not giue you Account of it: for I am Ignorant in it for I
 ‘ never Saw it Done by any man In my born Days but what
 ‘ foolish

In New England, Inoculation excited such alarm, that it was for a while restrained by the strong arm of the civil power; and the inoculator, Dr. Boylston, was persecuted with the utmost malevolence: while Dr. Dalhonde, an infamous renegado, was prevailed upon to make the following singular deposition before the magistracy at Boston, and the select men of that place had the wickedness to publish it. *

“ *First.*—About twenty-five years ago I was at Cremona in Italy, in the French army,

* foolish Invention I had in my owne head I could not bring it to
 * perfection and neuer gott a Hapeny by nor neuer shall: There-
 * fore I haue nothing to Say neither to the one or to the other
 * but pray God to blefs you all

Your Servant,

DA. JONES.

* I cannot Say that I have Inoculat my owne Child nor any
 * body Els because I do not Know what Reall Inoculation is

Oswestry, March 11, 1725-6.

DA. JONES.

* Dr. Boylston, l. c.

where

where there were thirteen soldiers, upon whom this operation was performed, of which operation four died; six recovered, with abundance of trouble and care, being seized with parotid tumours, and a large inflammation in the throat; one of them was opened; his diaphragm was found livid, the glands of the pancreas tumefied, and the caul gangrened. On the other three the operation had no effect."

"*Secondly.*—In the year 1701, being in Flanders, there was committed to my care, by M. Le Duc de Guiche, Col. of Dragoons, one Capt. Huffart, taken ill of the Small-pox, who told me in these very words: 'Ten years ago I was inoculated five or six times without that cursed invention taking effect upon me; must I then perish?' He was so violently seized, that he had several ulcers upon his body, especially one upon his arm, which occasioned a lameness thereof for life."

"*Thirdly.*

“ *Thirdly.*—At the battle of Almanza, in Spain, the Small-pox being in the army, two Muscovite soldiers had the operation performed upon them. One recovered, the other received no impression; but six weeks thereafter was seized with a frenzy, swelled all over his body. They not calling to mind that the operation had been performed upon him, believed that he was poisoned. It was ordered by Dr. Helvetius, Physician to his Royal Highness the Duke of Orleans, Don Larencio Bollatio, and Don Bentura Barrera, two of the King of Spain’s Physicians, that the body should be opened. His lungs were found ulcerated; from whence they concluded, that it was the effect of *that corruption which, having infected the lymphæ, did throw itself upon that vital part, which occasioned his sudden death.*

By me Dr. LAWRENCE DALHONDE.”

“ BOSTON,

“ *BOSTON, July 22d, 1721.* ”

“ The foregoing is a true translation from the declaration made in French, by Dr. Dalhonde, done at the instance and request of the Select Men of the Town of Boston.

By *WM. DOUGLASS.*

JOS. MARION.

Jurat coram nobis { *TIM. CLARK*
W. WELSTED } *Just. Pac.*”

Notwithstanding the palpable falsehood of this deposition, it was not only industriously circulated in New England, but even in London; and Dr. Wagstaffe copied a great part of it into his pamphlet.

The disputes about the practice of inoculating the Small-pox, both in this country and at Boston, as I have endeavoured to shew, were at this period carried to the utmost height, while the main question continued to

be

be overlooked, till, by the judicious discrimination of Dr. Jurin,^f the public attention was recalled to the true point in debate, and a plan was established for bringing it to a decisive issue.

He observed, that though the controversy had extended to many particulars, it principally rested upon the determination of the two following questions :

1st. Whether the distemper, given by inoculation, be an effectual security to the patient against his having the Small-pox afterwards in the natural way ?

2d. Whether the hazard of inoculation be considerably less than that of the natural Small-pox ?

Dr. Jurin puts all theological disputes and scruples out of the question, alleging that if

^f See his *Letter to Dr. Cotesworth.*

the practice of inoculation be really found to be a means of preserving life, it will not be easy to make the world believe, that it is criminal to use it.

The first question he thinks, judging from the trials then made, must be resolved in the affirmative.

In considering the second question, he enters upon an examination of the bills of mortality of the city of London, for forty-two years. From them he found, that the whole number of deaths amounted to 903,798; that out of this number 65,079 were occasioned by the casual Small-pox; and therefore that 72 in 1000, or more than one-fourteenth part of mankind die of the natural Small-pox. But he makes it appear probable, that of persons of all ages undergoing this distemper, there die at least two in seventeen; and his reasons for this conclusion are well deserving of con-

sideration:—“ Since one-fourteenth part of mankind die of the Small-pox, and the other thirteen parts die of other diseases; if these thirteen have all had the Small-pox, and recovered from it, before they fell ill of those other disorders of which they died, then just thirteen will have recovered from the Small-pox, for one that dies of that distemper: but as it is notorious, that great numbers, especially of young children, die of other diseases, without ever having the Small-pox, it is plain, that fewer than thirteen must recover from this distemper for one that dies of it. To determine exactly how many of these thirteen parts of mankind die without having the Small-pox, is a very difficult task: but it is easy to see, that a considerable deduction is to be made from them.”

“ In the first place, the two articles of still-born and abortive children, which are put
into

into the yearly bills as part of the number of burials, are unquestionably to be deducted.— With these two, Sir, you will not I believe think it unreasonable to join the following heads, which, by the best information I can procure, comprehend only very young children, or at most not above one or two years of age:—Overlaid, chryfoms and infants, convulsions, horfeshoehead, headmoldshot, teeth, water in the head, worms, rickets, livergrown, chin-cough, and hooping-cough, which articles in the yearly bills for twenty-two years last past, amount at a medium to 386 in each 1000, of the whole number of burials.”

“ It is true, indeed, that in all probability some small part of these must have gone through the Small-pox, and therefore ought not to be deducted out of the account: but then, on the other hand, as it is certain, that of the remaining $\frac{614}{1000}$ of mankind, there are

great numbers that never have the Small-pox, it will, I presume, be judged to be no unequal supposition, if I suppose all that are contained under the heads above mentioned, to have missed that distemper, when by way of compensation, I allow all the remainder of mankind to undergo it; which concession is so large, that it will abundantly make up for what I assume too much in the former supposition. Allowing therefore, that of every 1000 children, that are born, 386 die without having the Small-pox, and 72 do sometime or other die of that distemper; it follows, that the hazard of dying of it, to the remainder of mankind, who are all supposed to undergo that disease sooner or later, is that of 72 out of 614, or nearly two out of 17: so that *no more, than between seven and eight can recover from that distemper, for one that dies of it.* And if any considerable part of the aforesaid remainder of mankind, more than

than is allowed for above, do escape having the Small-pox, then the proportion of those who recover from it, will be still smaller."

He also recommends another method, which, if it were put in practice in several large towns and parishes, and for a sufficient number of years, would enable us to make a nearer and still more certain estimate of the proportion between those that recover, and those that die of the Small-pox. The plan proposed is to send a careful person once a year from house to house, to inquire what persons have had the Small-pox, and how many have died of it the preceding year. Dr. Nettleton, Dr. Whitaker, and some others, made an attempt in this way for the year 1722, the result of which was as follows:

	<i>Sick of the Small-pox.</i>	<i>Died.</i>
In several Towns in Yorkshire - -	3405	636
Chichester - - - - -	994	168
Haverford-West, - - - - -	227	52
	<hr/>	<hr/>
Total - -	4626	856

It appears from both of these accounts, that there died upon a medium about nineteen per cent. or nearly one in five, of persons of all ages who had the Small-pox. An estimate made upon 5000 persons at Boston, who laboured under the Small-pox, also produced a proportionate result; Dr. Jurin therefore comes to the following conclusions :

“ That of all the children that are born, there will, some time or other, die of the Small-pox, one in fourteen.”

“ That of persons of all ages, taken ill of the natural Small-pox, there will die of that distemper, one in five or six, or two in eleven.”

“ That of persons of all ages, inoculated without regard to the healthiness or unhealthiness of the subject, as was practised in New England, there will die one in sixty.”

“ That

“ That of persons inoculated with the same caution in the choice of subjects, as has been used by several operators one with another, here in England (if we allow in the two disputed cases above mentioned, that the persons died of the Small-pox), there will die one in ninety-one.”

Dr. Jurin, having thus proved, as far as the few facts concerning inoculation then known afforded data, that the advantage of this new art was very considerable; the opposition to it in consequence became less clamorous and less intemperate. However, it is but justice to remark, that Dr. Jurin has calculated only upon two deaths, which happened by inoculation in England during this time; whereas there were three, as has already been shown. The

success of inoculation at Boston, which Dr. Jurin took upon the report of the Reverend Mr. Mather, is likewise misrepresented, as appears by Dr. Boylston's account, already given.

SECTION IV.

SECTION IV.

*Of the Progress and Practice of Inoculation
from the year 1722, until the establishment of
the Inoculation Hospital in London, in 1746.*

DURING the year 1723, the practice of Inoculation made a considerable progress in England. It was adopted not only among the nobility of the first rank, but (which still more tended to its promotion), it received encouragement from the heads of the church, having been introduced into the family of the Bishop of Winchester, and also into that of that learned divine Dr. Calamy. Whence the
number

number of the inoculated this year, far exceeded the numbers in the two preceding years taken together. It amounted to 292, which being added to 182, makes the whole number of the inoculations in the years 1721, 1722, and 1723, to be 474, viz.

In and about London.

By Claudius Amyand, Esq. Principal and Serjeant Surgeon to his Majesty,	} 62
By Mr. Maitland, Surgeon, - - -	85
By Mr. Alexander Geekie, Surgeon, -	2
By Mr. Geekie, junior, Surgeon, - -	1
By Mr. Weymish, Surgeon - - -	5
By Mr. Dover, M. L. - - - -	5
By the Rev. Dr. Johnson, - - - -	3

In Yorkshire and the County of
Durham, &c.

By the Rev. Dr. Johnson, - - - -	8
By Dr. Nettleton, - - - -	80

In

In and about Norwich.

By the direction of Sir Benjamin Wrench,	6
By Dr. Bohun, - - - - -	4
By Dr. Offley, - - - - -	6
By Mr. Johnson, Apothecary, - - -	1
By Mr. Brady, Apothecary, - - -	2

At Stamford.

By Mr. Hepburn, Surgeon, - - -	2
--------------------------------	---

In and about Portsmouth.

By the direction of Dr. Brady, Physician	} 6
to the Garrison there - - -	
By Mr. Waller, Apothecary, - - -	14
By Mr. Robert Barkham, Apothecary, -	6
By Mr. Rowe, Surgeon, at Farnham, -	5

At Chichester.

By Mr. Smith, Surgeon, - - - - -	11
By Mr. Dymmer, Surgeon, - - - - -	4
By the Direction of Dr. Whitaker, - - -	1

At

At Steyning in Suffex.

By Mr. William Hill, Surgeon, - - 2

At Havant.

By Mr. Millard, Surgeon, - - - 2

At Winchester.

By Mr. Baconneau, Surgeon, - - - 2

By Mr. Godwin, Apothecary, - - - 15

At Rumfey, in Hampshire.

By Mr. Oliver, Apothecary, - - - 3

At Salisbury.

By Mr. James Elderton, M. L. - - 35

By Mr. Goldwyer, Surgeon, - - - 51

By Mr. Foulks, Surgeon, - - - 13

At Shaftesbury.

By Mrs. Dorothy Ringe, - - - 4

At Haverfordwest, South Wales.

By Dr. Williams, - - - 7

Near

Near Leiceſter.

By Mrs. Roberts, - - - - - 5

In and about Bedford.

By Mr. Daniel, Surgeon, - - - - 10

By Mr. Fleming, Apothecary, - - - 1

At Briſtol.

By Dr. French, - - - - - 1

At Cambridge.

By Mr. Warren, Surgeon, - - - - 4

Total 474

The reſults of theſe caſes are repreſented in the annexed table, taken from Dr. Jurin.

AGES.

AGES.	Persons inoculated.	Had the Small-pox by inoculation.	Had an imperfect fort.	Had no effect.	Supposed to have died of inoculation.
Under One Year	11	11	0	0	0
One to Two	15	14	0	1	2
Two to Three	31	31	0	0	1
Three to Four	41	38	0	3	1
Four to Five	33	31	0	2	1
Five to Ten	140	137	1	2	2
Ten to Fifteen	82	76	0	6	0
Fifteen to Twenty	56	50	1	5	2
Twenty to Fifty-two	62	50	3	9	0
Age unknown	3	2	0	1	0
Total	474	440	5	29	9

Hence we find, that of the 474 persons first inoculated in England, nine died, and their deaths were suspected to have happened in consequence of inoculation. Three of these

these unfortunate cases, which occurred in the year 1722, I have already related: the remaining six, which happened in the year 1723, are now to be noticed.

Case 4th.—Miss Rolt, aged between nine and ten years, and a boy about three years old, were inoculated by Serjeant Amyand, in London, both with the same matter, September 25th, 1723. They both began to sicken on the eighth day from inoculation; and on the tenth the Small-pox appeared, of the distinct kind, on both. The boy recovered: but Mr. Maitland says, “Miss Rolt, the day before the eruption, complained of great pains in her shoulders, elbows, and knees; and the fever continuing, the Small-pox fluxed upon her the third day from the eruption. Sir Hans Sloane and Dr. Arbuthnot attended her. She went through the distemper with ease; the

Small-pox

Small-pox began to turn on her on the seventh day; but were not dried all over till the fourteenth. The fever that arose then occasioned her being blooded, and soon after several tumours appeared in the neighbourhood of several joints, which were opened. The fever continued, and more suppurated tumours were daily appearing, which were discharged as soon as possible. Sometimes she was troubled with a diarrhœa, whereby, as well as by the suppuration of twenty or thirty boils that were opened, she was spent, so that she died the 27th of November following; that is, nine weeks after inoculation."

Case 5th.—Miss Brooksbank, fifteen months old, at Ealand, near Halifax, was inoculated in June, 1723. The eruptive symptoms came on early, and were very severe; the pustules were numerous, but distinct; they were succeeded

ceeded by scabs on the eleventh day, when the child was so well as to be able to play about the room; but the following night she died suddenly. She was inoculated by Dr. Nettleton.

Case 6th.—Miss Acourt, four years of age, subject to scrophulous eruptions, was inoculated at Ivy-Church, near Salisbury, by Mr. Goldwyer, September 20th, 1723. “On the eighth day she complained much of a pain in her head and back; the next day her face had an erysipelatous appearance, and twenty-four hours afterwards the pustules appeared very thick in her face, right arm, and right thigh, and seemed to advance very well. Her breast, abdomen, &c. were equally full; yet they continued flat and languishing, without coming to maturity.—The fever increased every day, and she became more and more
L restless,

restless, though the incisions discharged freely. The pustules on her face, and on her right arm and thigh, turned the seventh and eighth day; but the second fever came on, and gaining ground every day, she grew weaker and weaker, till she expired, which was on the twenty-second day from the incisions."

Goldweyer.

Case 7th.—Francis Bacon, Esq. seventeen years of age, was inoculated at Earlham, near Norwich, by Dr. Offley, September 11th, 1723. "The incisions did not inflame, but healed in about ten days: no fever, nor any sort of eruption followed. He was kept in breathing sweats in bed the ninth and tenth day, and afterwards purged.

"On the first of October, a second attempt was made with matter taken from his sister; the success was the same, and he was released
from

from his confinement. During the whole proceeding he slept very well, had a good appetite, and made not the least complaint, till upon taking the air, in a very sharp day towards the latter end of October, he became affected with the usual symptoms of a slight fever, which in a few days went off, and he returned to Cambridge about the middle of November. About Christmas he was seized with a nervous fever, such as he had been ill of several times before, and died on the 5th of January. No spot nor eruption of any kind appeared upon him; but a little before his death, a great quantity of blood and matter gushed out at his nostrils."

Signed by *Mrs. Bacon, Professor Green,* and
Dr. Asphenhurst.

Case 8th.--Mary Waller, five years of age, was inoculated near Gosport by Mr. Waller,

October 18th, 1723. "This child sickened at the completion of the fourth day, and the eruption appeared on the sixth. She had the confluent kind all over her, with many purples, and died on the eighteenth day after she was inoculated."

Waller.

Case 9th.—Miss Brailsford, aged two years, was inoculated by Dr. Dover. "She died the twenty-sixth day after inoculation. Her death was occasioned by a worm-fever."

Dr. Dover.

First.—Reasoning from the facts here laid down, Dr. Jurin infers, that the inoculators will raise several objections against the estimate of the hazard of inoculation, founded upon the cases of these nine persons, who are put down in the table as having died by inoculation out of 440, the whole number of those in whom

true

true variolous pustules were produced. He says, "They will maintain, that the fourth, sixth, and eighth cases ought to be left out of the computation, because the patients were unhealthy subjects: and therefore no argument can be drawn, from their dying, to increase the hazard of those who shall be inoculated in perfect health; and consequently that the hazard to healthy persons can, at most, be reckoned to be no more than that of six in 440 or 445, that is, one in 73 or 74."

Secondly.—He says, "They may object to the seventh case; as entirely out of the question."

Thirdly.—Dr. Jurin thinks they may object to the third, fourth, and seventh cases, which not having proved fatal in consequence of the Small-pox, cannot therefore properly be included in a comparison between the mortality of this distemper, in the casual and in the

inoculated way; as deaths so happening in the former case, are never placed to the account of Small-pox in the bills of mortality, &c.

Fourthly.—He observes, that they may likewise object to the first, second, and fifth cases, from the circumstances mentioned in the accounts of them; and be consequently not disposed to allow of more than one case wherein the patient can be justly said to have died from inoculation; and he thinks even that may be considered by them as dubious.

Thus it appears, that Dr. Jurin very cautiously, and perhaps artfully, declines giving his own opinion, but strongly urges that of the inoculators on these cases, submitting the force of their objections “to the determination of those who must and will judge for themselves; that is, to every intelligent reader, who being thus apprized of the facts, may easily, by striking off such of the instances
given

given above as he thinks reasonable, form to himself a judgment of the hazard of life in this operation. If he sees cause to except one person out of the number of those suspected to have died of inoculation, the hazard will be that of one in fifty-five or fifty-six.

If he except The hazard will be one in

Two - - - 63 or 64

Three - - - 73 or 74

Four - - - 88 or 89

Five - - - 110 or 111

Six - - - 147 or 148

Seven - - - 220 or 222

Eight - - - 440 or 445''

This statement, however, though admitted without a single exception of any of these nine cases, still proved the chance of recovering from the inoculated Small-pox to be incomparably greater than from that disease as casually produced. For at this time it appeared, that

of 14,559 persons, who had been affected with the natural Small-pox, 2351 died; nearly one in six, or five out of thirty-one.

In the present state of inoculation, it will scarcely be thought necessary to point out in which of these unsuccessful instances the patients have been unjustly supposed to have died in consequence of inoculation; nor indeed are the data always sufficient for the purpose. But it is evident, that the sixth and eighth cases ought to be set aside; for in the former, no complaint was produced by inoculation; and the early eruptive symptoms in the latter case shew, that the child had been previously infected with the Small-pox in the natural way.

The number of persons inoculated in the year 1724, was, in comparison with the preceding year very small, as it amounted to no more than forty. Inoculation, however, triumphed

triumphed again, under the auspices of royal patronage; and Dr. Wagstaffe, after his invidious remark, "that posterity will scarcely be brought to believe, that an experiment, practised only by a few ignorant women, should so far obtain in one of the politest nations in the world, as to be received into the Royal palace," had now the mortification to find it introduced a second time into the Royal family. For their Royal Highnesses Prince Frederick and Prince William were both inoculated this year. The former, who resided at Hanover, and was then eighteen years of age, submitted to be inoculated by Mr. Maitland on the first of May, 1724, and the event was extremely favourable; his Royal Highness not having more than from eleven to eighteen pustules. The latter, who about the same time was inoculated here by Serjeant Surgeon Amyand, under the direction of Sir

Hans

Hans Sloane, likewise passed through the Small-pox without any alarming or even troublesome symptom. Prince Frederick, from having been inoculated at Hanover, is not ranked among the forty persons on whom the operation was performed in England in the year 1724.

The numbers inoculated this year were as follow :

By Serjeant Amyand, - - - - - 11

By Mr. Maitland, - - - - - 4

By Mr. Pemberton, Surgeon, - - - 3

By Mr. Cheselden, Surgeon, by the }
direction of Dr. Plumtre, - } - 1

By Mr. Pawlett, Surgeon, - - - - - 1

By Drs. Howman and Offley, at Norwich, 3

By Dr. Beeston, at Ipswich, - - - - 3

By Mr. Lake, Surgeon, at Seven-Oaks, - 3

By Mr. Goodwin, Apothecary, Winchester, 1

By Mrs. Dorothy Ringe, at Shaftesbury, - 2

By

By Mr. Skinner, Apothecary, at Ottry,	}	
Devonshire, - . - - -	}	6

By Mr. Tolcher, at Plymouth, under the	}	
care of Dr. Oliver, - - - -	}	2

Total -	40
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The reader will perhaps be surpris'd on observing, that notwithstanding the obvious advantages of inoculation, it should yet have been so little employ'd in 1724, as the above statement represents. But for this Dr. Jurin gives a very satisfactory reason:—People do not easily submit to a practice in which they apprehend risk, unless they are urg'd to it by the dread of a greater danger. “This,” he says, “plainly appears from the state of the natural Small-pox, and that of inoculation, in London, for the three years last past;

for

for as the Small-pox, in the natural way, was much less fatal the last year than in the years 1722 and 1723, so the number of persons inoculated that year was much less than in the two former. And that this was owing to that cause, and not to the practice's declining and falling into discredit, is plain from this present year (1725), in which we have had already a considerable number of persons, who have undergone the operation from the alarm, as I suppose, occasioned by the Small-pox in the natural way, which has been for some time very mortal; and the same remark may be made with regard to towns in the country, where scarcely any person has ventured upon inoculation, unless when the natural Small-pox has made a great ravage in the neighbourhood; so much more are we influenced by our fears of present danger, than by the apprehension of a remote one."

Of

Of the forty cafes of inoculation, related above, one was unfuccefsful, as appears by the following table :

AGES,	Number of Perfons inoculated.	Had the Small-pox by inoculation.	Had an imperfect Small-pox by inoculation.	Had no effect.	Supposed to have died of inoculation.
From One to Three	3	3	0	0	0
Three to Four.....	2	2	0	0	0
Four to Five	2	2	0	0	0
Five to Ten	11	10	0	1	0
Ten to Fifteen	4	3	0	1	0
Fifteen to Twenty.	7	7	0	0	0
Twenty, &c. &c....	9	9	0	0	1
Age unknown	2	2	0	0	0
Total	40	38	0	2	1

This

This person who died under inoculation, was William Jeffery, at Seven-Oaks, in Kent. He was inoculated by Mr. Lake, on the 28th October; and from Dr. Fuller's letter to Sir Hans Sloane, it appears, that on the ninth day the disease commenced with great malignity; the pustules were very numerous, and among them many petechiæ were discovered. This patient died on the sixteenth day after inoculation. The severity of the disorder is ascribed to drinking to excess of strong beer, which he did almost daily, from the day after inoculation till the eruptive symptoms supervened.

The number of persons inoculated, including those of the year 1724, now amounted to 514. But we learn by the tables given above, that only 478 of these had the Small-pox by inoculation. And if the ten, who were suspected to have died in consequence of being inoculated, be admitted among the numbers, the

deaths

deaths occasioned by the practice of this new art would amount on an average to about one in forty-eight.

The year 1725 was remarkable for the great mortality produced by the natural Small-pox; for it appears, that the number of deaths by this, comprehended in the London bills this year, amounted to 3188, and to an eighth part of the whole annual mortality in the metropolis. Still, however, the progress of inoculation was not so considerable, as might have been expected; for no more than 151 persons were inoculated during 1725, and in the next year only 105.

The following statement exhibits the number of persons inoculated during both those years in the different parts of Great Britain.

In and about London.

By Mr. Amyand, Surgeon,	- - -	66
By Mr. Maitland, Surgeon,	- - -	37
		By

By Mr. Weymish, Surgeon, - - - -	6
By Mr. Chefelden, Surgeon, - - - -	6
By Mr. Pemberton, Surgeon, - - - -	5
By Mr. Pawlett, Surgeon, - - - -	2
By the Rev. Mr. Johnson, - - - -	9
By Mr. Manley, Surgeon, - - - -	1
By a Lady, who inoculated herself, -	1
By Mr. Maitland, in Scotland, - -	10
By the same, near Durham, - - -	6

Halifax.

By Dr. Nettleton, - - - - -	43
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Liverpool.

By Dr. Angier, - - - - -	3
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Nottingham.

By Dr. Woodhouse, - - - - -	2
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Wooton, in Bucks.

By Mr. Burges, Apothecary, of London,	4
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Seven-Oaks.

Sevenoaks.

By Mr. Lake, Surgeon, - - - - - 13

Southampton.

By Mr. Carnac, Surgeon, - - - - - 1

Salisbury.

By Mr. Elderton, M. L. - - - - - 2

By Mr. Goldwyer, - - - - - 4

Worcester.

By Dr. Beard, - - - - - 4

Hagley.

By Sir Thomas Lyttleton, Bart. - - - 4

York.

By Mr. Naish, Surgeon, - - - - - 1

Nantwich.

By Mr. Riley, Surgeon, - - - - - 4

In Dorsetshire.

By Mr. Goldwyer, Surgeon, - - - 5

Plymouth.

By Mr. Veal, Apothecary, - - - - 5

Wrotham, in Kent.

By Mr. Dane, Surgeon, - - - - 2

Ringwood, in Hampshire.

By Mr. Bright, Surgeon, - - - - 3

Shipton Mallet, in Somersfetshire.

By Mr. Elderton, M. L. - - - - 4

By Mr. Towgood, Surgeon, - - - - 3

Total of Persons inoculated during	}	256
the years 1725 and 1726, -		

Out of this number there were four unsuccessful cases :

1.—Miss Eyles, thirteen years old, inoculated by Mr. Chefelden, on the evening of Tuesday the 23d of February, 1725, after being purged twice, and having lived very abstemiously for twenty-seven days. “ On Monday following,

March

March the first, the eruption appeared, though obscurely, but very plainly the next morning; she was very full, but without any ill symptoms, till the Friday se'nnight following, at eleven at night, being the eleventh or twelfth day after the eruption, she was taken with a sudden fainting, and died in a few minutes."

Mr. Cheselden.

2.—The second son of Lord Hillsborough, at the age of seven, was inoculated by Mr. Maitland, May 24th, 1725. "He sickened the third day, that is, four days sooner than the usual, and the eruption appeared the fifth day, neither did his disease observe the signs and course of the Small-pox by inoculation.—Whereby it is plain he had taken the infection from his sister, who had the natural distemper in the family before he was inoculated. Upon the twentieth day after the operation,

when the Small-pocks were dry and scaling off, he died of a most malignant fever, as was evident by the several exanthemata, which were seen on his body some days before his death.”

Mr. Maitland.

3.—Mr. Hearst, about 23 years old, was inoculated at Salisbury, by Mr. Goldwyer, on Saturday the 10th of July, 1725. On the eighth day the eruptive symptoms commenced, and continued with feverity until Thursday, when the pustules were very numerous, and of the small florid distinct kind. About seven days after this time, when the pustules had begun to dry, the secondary fever attended with a violent delirium supervened, and continued about four days, when he died.

4.—Mr.

4.—Mr. Urquart's child, one year and an half old, was inoculated at Meldrum, in Aberdeenshire, by Mr. Maitland, August 29th, 1726. "This boy sickened the seventh, and died on the eighth day, before any appearance of eruption, of fits (from a hydrocephalus), which he had formerly been subject to, though concealed both from the parents and the operator."

Mr. Maitland.

In the years 1727 and 1728, the practice of inoculation evidently began to decline; for though the Small-pox generally prevailed at this period and was very fatal, yet the number of persons inoculated in Britain during these two years was only 124; of whom 87 were in the former, and 37 in the latter year. Neither was inoculation wholly so successful as it had hitherto been; since three of the

above numbers are supposed to have died under the effects of the operation.

The first was a son of Mr. Wansey, of Warminster, in Wiltshire, aged one year and an half, inoculated by Mr. Elderton, Dec. 1, 1727. “ He had the distemper very favourably, not having more than forty pustules in his face and neck, and few or none on his body. His incisions run well. The pustules came to full maturity the seventeenth or eighteenth day from the inoculation. The child being for some time perfectly well, died in nine or ten days after.”

Mr. Elderton.

2.—Enoch Trumble, aged eight months, was inoculated by Dr. Bennet, at Newbiggin, near Newcastle, February the 16th, 1728. “ He began to be disordered on the eighth day.

On

On the ninth three or four crystalline eruptions were observed about his toes; several others afterwards appeared upon his feet and legs, and increased in size to three times the bulk of an ordinary variolous pustule. On the evening of the tenth day he had a slight convulsive fit, and on the following morning several pustules appeared, of the distinct sort and of a good colour, upon which the fever and restlessness abated. At night the child was seized with a cold fit, succeeded by great heat and fever, which was thought to be a return of an intermittent, with which both the mother and child had been affected two months before: and this was the more probable, as the mother, who suckled the child, had also experienced a return of the ague. From this time the pustules became flatter, and of a darker hue. About the seventeenth day, tumours formed in both arms

and feet, which, on being opened, discharged a considerable quantity of pus, which gave the child much relief. On the nineteenth day the pustules became dry on the face and legs, and soon afterwards scaled off; but after some days the fever returned, and the child died.”

Extracted from Dr. Bennet's Letter.

3.—The son of a person of quality (whose name is concealed), eleven years old, was inoculated in London, April, 1728. He sickened on the sixth day from the operation, and a few pustules appeared on the eighth and ninth. He died, as Dr. Scheuchzer was informed, on the fifteenth day after inoculation. Respecting this case there is no circumstantial account.

During the first eight years of inoculation in Great Britain, as appears from the preceding account, 897 persons were inoculated; of whom

whom 845 had true variolous pustules, and 13 an imperfect eruption: with 39 no distemper was produced by the operation; and seventeen were suspected to have died under its effects. The particulars of all the cases are specified in the following table, given by Dr. Scheuchzer.

AGE.	Persons inoculated.	Had the Small-pox by inoculation.	Had an imperfect Small-pox.	No effect	Suspected to have died.
Under One Year ..	24	24	0	0	2
One Year to Two..	34	33	0	1	4
Two to Three	65	65	0	0	1
Three to Four.....	91	88	0	3	1
Four to Five	65	63	0	2	1
Five to Ten	257	249	3	5	3
Ten to Fifteen	140	131	1	8	1
Fifteen to Twenty .	104	95	3	6	2
Twenty, &c.	110	91	6	13	2
Age unknown.....	7	6	0	1	0
Total	897	845	13	39	17

In explanation of this and the preceding tables, it is observed, " that by having an *imperfect Small-pox*, is meant, the having some flighter eruption of but a few days continuance, but this, attended with an inflammation and running of the incisions for the usual time, and generally preceded by some of the common symptoms of the Small-pox: this being esteemed, by the accounts from Turkey, and our own experience at home, as far as it goes, to be an effectual security against having the Small-pox afterwards in the natural way. Under the article of *no effect*, are comprehended not only all those persons upon whom the operation produced no effect of any kind, but also those upon whom the eruption was so flight, and the running of the incisions so little in quantity, or of so short a duration, as to render it justly doubtful whether it would amount to a security or no. Some of these

were

were known to have had the Small-pox before, and were inoculated only for experiment sake; and several of the rest underwent the operation upon a doubt whether they had had the Small-pox before or no, the distemper which they had undergone in the natural way having been so slight, and so favourable, as to make their parents, themselves, or their physicians, to suspect that it was not the true Small-pox. But there were some upon whom inoculation did not produce the distemper, though there was no suspicion of their having had it before.”

In order to compare the preceding statement with the mortality occasioned by the natural Small-pox, inquiries were made from house to house in different parts of England, during the eight years in which inoculation had been practised. From these domiciliary visits it was discovered, that of 18,229* persons, who had

* Including 5000 in New England.

been

been affected with the Small-pox in the casual way, 3008 died under the disease; or about one in six: whereas the deaths by inoculation, even upon granting the utmost number contended for by the anti-inoculators, amounted to no more than one in fifty.

HAVING thus given the general result of inoculation, from its regular commencement in our island to the year 1729, and having detailed all the unsuccessful instances of it, I shall endeavour to render the facts more useful and instructive, by relating the process of inoculation at that time usually adopted, and the symptoms with which it was commonly attended. By these means, and by considering the method in which the inoculated patients were treated by our early practitioners, it will be understood why the artificial Small-pox
was

was then so much less favourable in general than at present.

First.—Dr. Jurin recommended “ great care to be taken to inoculate none but persons of a good habit of body, and free not only from any apparent, but, as far as could be judged, from any latent disease; for which reason, every prudent person will, in this case, have the advice and opinion of his own physician, whether the subject to be inoculated, be in a fit condition to undergo the Small-pox; that so he may not have the distemper, and a bad constitution, or perhaps another disease, to struggle with at the same time; of which there have been several fatal instances through the neglect of this caution. In some cases, indeed, it has fallen out, that the person inoculated has by this means got free of another disease, under which he laboured before, as sometimes happens

happens likewise in the natural way, though the contrary is much more frequent.”

“ *Secondly.*—He says, the body, especially if plethoric, ought to be prepared by proper evacuations, as bleeding, purging, vomiting, &c. though in many cases there will be occasion for very little or none of these, it being sufficient to enjoin a temperate diet, and proper regimen: but this must be left to the judgment of the physician.”

“ *Thirdly.*—The utmost caution ought to be used in the choice of proper matter to communicate the infection. It should be taken from a young subject, otherwise perfectly sound and healthful, who has the Small-pox in the most favourable manner. When the pustules are perfectly matured, and just upon the turn, or soon after, two or three of them should be ripped with a glover’s needle, or small lancet, and a couple of small pledgets of
lint

lint or cotton are to be well moistened with the matter, and immediately put into a little vial or box, and carried in the warm hand, or bosom of the operator, to the house of the person to be inoculated."

"*Fourthly.*—The incisions are usually made with a small lancet in the brawny part of both arms, or in one arm and the opposite leg, cutting just into, or at most through the cutis or true skin, for the length of a quarter of an inch, half an inch, or at most an inch. This being done, one of the pledgets moistened with the infectious matter, is to be laid upon each incision, and to be kept on by means of a bit of sticking plaister, laid over it for about four and twenty hours; after which all may be taken off, and the incision dressed with common diachylon, or with only warm cabbage or colewort leaves, once a day at first; and afterwards when the discharge is considerable,
twice

twice a day till they heal; or only with a linen roller, to defend them from the air."

"*Fifthly.*—The person inoculated sometimes receives the Small-pox without any previous sickness, as often happens in the most favourable sort in the natural way. But the greater part begin to be a little feverish, and have more or less of the usual symptoms preceding the natural Small-pox, most commonly upon the eighth day from inoculation, though pretty often upon the seventh, and very rarely a day or two sooner or later."

"*Sixthly.*—The patients are sometimes taken with flushing heats, which disappear again in a little time, about the fourth or fifth day; but the eruption of the pustules happens generally within a day, or sometimes two or three, after the sickening, viz. most commonly on the ninth day, less frequently on the tenth, and still less on the eighth or eleventh; in a
few

few cases it appeared on the seventh or twelfth, in one case on the eighteenth, in one on the twenty-fourth; in one on the sixth, and in one on the third. The last patient but one had had the confluent sort, and died. The last was very full, of the distinct kind, and recovered."

"*Seventhly*.—The incisions begin to grow sore and painful about the fourth or fifth day, and about the sixth, seventh, or eighth, they begin to digest, and run with a thick purulent matter, which gradually increases till about the turn of the distemper, during which time the wounds grow wide and deep; afterwards the running gradually abates, and they usually heal up in about a month, sometimes in three weeks, though in some they continue running five or six weeks, or something longer. The greater the discharge is by the incisions, the more favourable the distemper is found in

other respects. When the inoculation does not take effect, the incisions heal up in a few days, like a common cut. Where children happen to have issues before inoculation, they begin in a few days to run in a much greater quantity than usual, and continue so doing in the same manner as the incisions, during the state of the distemper, after which they return to their ordinary course."

Respecting the medicinal treatment of persons under inoculation, Dr. Jurin is silent; but we learn from Dr. Whitaker, that the patients were seldom strictly confined to a vegetable diet, and in no period of the distemper ever exposed to the cold air, but on the contrary they were kept in a warm room, especially during the eruptive fever; and at this time purging the patients was judged improper, from an idea of its disturbing the regular process

process of nature, in the expulsion of the variolous matter. When the fever was considerable, bleeding, blistering, and diaphoretics were usually employed, and occasionally recourse was had to anodynes. After the eruption of the pustules, the disease was regarded in the same light as the common Small-pox, and invariably treated as such, according to the plan and skill of the attending practitioner.

The general conclusions drawn by Dr. Jurin and Dr. Scheuchzer in favour of inoculation, were warmly combated by several authors; but the most violent of these were two apothecaries, Mr. Howgrave and Mr. Maffey. The pamphlet of the former is entitled, "*Reasons against the inoculation of the Small-pox, in a letter to Dr. Jurin:*" that of the latter, "*Remarks on Dr. Jurin's last yearly account of the success*

of inoculation.” *—There seems only one point on which these writers have adduced any thing like argument, against Dr. Jurin’s general deductions; and this is founded upon the first article of his instructions to inoculators, viz. “to inoculate none but persons of a good habit of body, and free not only from any apparent, but, as far as can be judged, from any latent, disease.” Upon this position, Mr. Howgrave contends, that the number of persons proper for inoculation must be very few; adding, “I would now beg leave to ask these learned mimics of a few ignorant Greek women, two questions.

“First,—Whether inoculation is not, in

* It is worthy of remark, as it shews the malevolent virulence of the authors, that the mottos prefixed to these two publications, are

Quid non mortalia pectora cogis
Auri sacra fames?

And,—Si populus vult decipi inoculentur.

their

their opinion, the most *gentle* and *safe* manner of having the Small-pox?

“ And secondly,—Whether a person of a *weak constitution*, or a *bad habit of body*, be not as liable, if not more so, to receive the Small-pox by infection, as the most healthful can be?

“ The former question, they will, I am sure, answer me in the affirmative; and the latter, I am confident, they will not deny, or if they should, demonstration would be against them.

“ Now what I, and every one of common sense, must infer from hence, is this; that if the method of inoculation is so much *gentler* and *safer* than the natural way, methinks bad constitutions should be the most proper subjects for this wonderful skill. For since weak and bad constitutions are in as much, if not more danger of having the Small-pox in the natural way than good ones, it were better sure to have them by the safe and easy method of inocula-

tion, than with the great danger and violence which those gentlemen affirm always attend the having them by infection. And though inoculation with all its infallibility may affect the weak and infirm more than the strong and found, yet if it be in itself a more gentle and safe method than what comes the natural way, it must, by parity of reason, affect the same subject in a less degree, and therefore ought rather to be chosen."

Mr. J. Massey objects to Dr. Jurin's calculations, on the same principle; alleging, "that an abatement in the mortality should be made for the different circumstances and conditions of the multitude, who take the Small-pox naturally under all the disadvantages of age, diseases, and poverty, and the want of every thing, and every help the inoculated enjoy, which makes the hazard of dying in such cases very great. Had these essential differences in
the

the circumstances of life, and health, and ages, been duly considered, I am loth to imagine the Doctor would have published every year *a comparison that misrepresents the true state of the question*; which question is this:—"What is the difference in success between the inoculated pox, and the natural pox, the patients in both sorts being under equal advantages as much as may be?"

"Now the Doctor puts the question thus: Whether the hazard of inoculation be considerably less, than that of the natural Small-pox, without considering the patients of each sort, and under equal advantages? — If this be fair, hang fair!"

Inoculation was not regularly practised in Scotland till the year 1726, when Mr. Maitland performed this operation upon ten per-

sons: but as one of these cases was unsuccessful (a child of Mr. Urquart), such a prejudice was raised against the practice, that it was discontinued for twenty years afterwards; and then revived, not without much difficulty, by Dr. Rose, of Aberdeen. At Dumfries, where the casual Small-pox had proved remarkably malignant, inoculation was first had recourse to, in the year 1733, and has been constantly practised ever since; though in most of the other parts of North Britain it was not adopted till about the year 1753.

In Ireland, inoculation was first employed in Dublin, in 1723, by Mr. Hannibal Hall, Surgeon, who in this and in the three following years inoculated sixteen persons. These, with four by Mr. John Nicholls, and five others, whose cases have been related by Dr. Bryan Robinson, constituted at this time, as far as we are informed, the whole number of
the

the inoculated in that kingdom. And as three out of this small number died in consequence of inoculation, it must be confessed the practice was not very encouraging. The first who died under inoculation at Dublin, was Percy Oliver, a rickety child, aged fourteen months; he was inoculated by Mr. H. Hall, March 15th, 1724.—This child, according to Mr. Hall's account, “ became restless on the seventh day after inoculation; on the eighth the fever grew higher, and in the evening the Small-pox appeared in his face and arms; the ninth they came out in great numbers on his arms and thighs, and the fever went off: the tenth day the pustules filled, and were very distinct, but of the smaller sort: the twelfth the Small-pox dried on his face: the thirteenth he was seized with a looseness, which, by the care of Dr. Mitchell, was stopt: the fourteenth a small tumour was observed in the inside of
the

the thigh, which suppurated and healed in a few days. He was several times purged with rhubarb, and continued well, but weak, for some time after the Small-pox was over.— Afterwards he was seized with a heaviness, or weight in his head and neck, which he had been subject to, and lastly with convulsive fits (to which he had been subject), which carried him off.”

The second, was the eldest son of a gentleman at Dublin, inoculated at the age of thirteen, August 26th, 1725. “ On the eighth day after inoculation, he began to be disordered with a head-ach and vomiting. His vomiting was frequent and violent till the third day of his illness, and then it abated, but did not cease, for he vomited at times till the fourth day at noon. No pock appeared, but on the third, at night, purple spots, of different sizes, were

were observed all over his body, many of which were as large in diameter as a midling pea. About this time he fainted, and died in the evening of the fourth day, about twenty-four hours after the first appearance of the spots. He was extremely thirsty during his illness, and for the most part pale and cold.

“ His incision had a good digestion at the second dressing, which was on the third day after it was made, and continued in this state till the day on which he sickened; then it grew pale, flaccid, and had little or no discharge. It continued thus till the third day of his sickness; then it turned blackish, and was perfectly dry on the fourth, the day on which he died.”

Bryan Robinfon.

The third, was the third son of the same gentleman, aged about ten years, who was
inoculated

inoculated at the same time with his brother.

“ He was a fresh-coloured strong healthy boy, who never had any sickness; he began to be disordered on the eighth day after inoculation; in the evening he complained of a pain in his head and belly. He was very hot, thirsty, and restless all that night. The next day, which was the second of his sickness, he vomited in the morning, and continued vomiting at times till the third day in the evening. Then the eruption began, and on the fourth, in the morning, it appeared in his face like an erysipelas. I could not at that time discover any pustules either on his body or limbs; but he had many purple spots all over him, especially in his neck and loins, many of which were as large in diameter as a great pin’s head. On the fifth, the pock began to appear in his body and limbs, and came out thick on the sixth. He was extremely
restless,

restless, and raved much from the beginning of the eruption to the sixth day, but was pretty quiet that night, slept, and began to spit. On the seventh, his face was swelled, his spitting continued, and he had some sleep. On the eighth, he continued much in the same state, only drank, and slept more than he had done before. On the ninth, the swelling of his face abated. On the eleventh, his breath grew short, his spitting stopped, and he died in the evening. His pock was the worst sort of the confluent kind; it never filled nor digested, but continued flat and watery till his death. He had no thirst, and would drink but little during his illness. His incision discharged a well-digested matter, from the third day after inoculation, till the day on which he sickened: then it grew pale, flaccid, and had little or no discharge. It continued thus till the eighth day of his sickness, then it turned
black,

black, and was scarified. On the ninth, it discharged a little thin sanies. It grew quite dry on the tenth, the day before he died.”

Bryan Robinson.

Inoculation at Hanover, as before noticed, was first practised in 1724, by Mr. Maitland, upon his Royal Highness Prince Frederick, and afterwards upon eight children of the Baron de Schulenberg. The example and success of these cases of inoculation led Mr. Wreden, Surgeon to the Prince, to employ this new art at the Hanoverian Court, where several were afterwards inoculated by him, and of which he has given an account in *an Essay on Inoculation*, published in London in 1729. This work, however, contributes but little to the advancement of inoculation, as it contains only few cases, and those greatly obscured by theory and conjecture.

Though

Though the advocates for inoculation in England, at this time, were many and respectable, since among them may be enumerated Sir Hans Sloane, Drs. Mead, Jurin, Arbuthnot, Fuller, Huet, &c. yet I have already shewn, that the practice of this new art had not existed more than seven years, before it evidently began to decline. Dr. Jurin, who promised to give an annual statement of its success till it should be "either established on a firm and lasting footing, or be justly exploded," stopped with the year 1726, and he was followed by Dr. Scheuchzer, who only carried the account two years further: from this period till about the year 1738, the subject of inoculation, which had excited so much controversy, seems to have been almost wholly disregarded. The number of persons who availed themselves of the artificial mode of communicating the Small-pox was now so inconsiderable, that it excited

no jealousy in the anti-inoculators; much less could it afford any cause of triumph to the promoters of inoculation: and thus both parties, having nothing new to offer on the subject, joined in silent issue. The former probably consoled themselves, in thinking enough had been said to shew the folly of the invention; and the latter, that they had adduced sufficient proofs to establish its advantages. However, in *An enquiry into the advantages received by the first eight years inoculation*, published in 1731,* the author endeavours to place this subject in a new light. He admits, that by the accounts of Drs. Jurin and Scheuchzer, which are given with the utmost fidelity, it appears, that 845

* *A Dissertation concerning Inoculation*, subjoined to an Essay on the Small-pox, was published by Dr. William Douglas, in 1730. But of this I have thought it unnecessary to take particular notice, as it contains only the leading facts during the first eight years, in which inoculation was practised here. His dissertation, however, was certainly written to prejudice the public mind against the new practice.

persons have received the Small-pox by inoculation, and that 17 of them, or nearly one person in 50 has been suspected to have died by it: while, out of 18,229 who were seized with the natural Small-pox, 3008 persons, or one in six, died of this distemper. But this advantage of the inoculated over the casual Small-pox, he contends is not a real but a fictitious one; as being grounded upon a supposition, that all these 845 persons must have undergone the distemper, whereas many die who never had it. He therefore thinks the calculation should not be made on a comparison between the number of those who are inoculated, with the like number who actually undergo the natural Small-pox; but with the loss out of as many, who, not submitting to inoculation, take the chance of having the disease in the accidental way. And though upon this ground he finds that fewer lives are

lost by inoculation than by the natural disease, yet, as the loss in the former case is *almost present*, and in the latter, at *some distance of time*, he alleges, on this account, a further deduction from the number of lives saved by inoculation, ought to be made. Lastly, he maintains, that by inoculation the variolous infection is spread abroad, and thus a considerable increase of mortality by the Small-pox is occasioned; so that the lives saved to the persons themselves inoculated, fall very short of the lives lost from the increased infection.

To this anonymous pamphlet no reply was made; and as the subject of it will again come into discussion, I shall pass on to the next publication in 1733, entitled, *Some reasons why the practice of inoculation ought to be introduced into the town of Bury, at present*. The author, Dr. Hartley, sets out by saying, "The number of people who have not had
the

the Small-pox is so great, that in the way of accidental propagation it will probably remain in the town a very long time still, to the vast detriment of all trade and business, and perhaps the loss of the assizes, sessions, fair, and other public meetings; whereas if inoculation was generally practised, it might be got through the town in a very short time. In the first case we may have it two years, in the last we need not have it six months." His arguments in favour of inoculation are not new, but seem principally founded on the calculations of Dr. Jurin, who had informed the author, that his own real opinion concerning that practice might now be easily known, since he had lately inoculated his own child.

Dr. Hartley also relates, that by a letter, which he received from Dr. Nettleton in Yorkshire, in 1730, he was informed, that of 119 which had been inoculated by this physician,

all had recovered except one; and that he thought where due care is taken in the choice of the infectious matter, inoculation would very rarely fail of success. This pamphlet was immediately answered with much asperity by Dr. Warren,* who does little more than detail the old hackneyed arguments employed by the opposers of inoculation. The following observations, however, are truly his own: “ This barbarous and dangerous invention was, about ten years ago, imported at London, from Turkey; the curiosity, like many other foreign monsters, pleased at first, but soon after grew ungovernable by its own masters, and when let loose made great havock and slaughter. But after all the difficulties and disappointments, it was endeavoured to be

* *An answer to a pamphlet, entitled, Some Reasons why the practice of inoculation ought to be introduced into the town of Bury at present, by Martin Warren, M. D.*

buoyed up by *able* hands, which undertook to prove, that this Turkish method of inoculation might safely and securely be practised in our climate, and upon our constitutions, and that a Circassian impiety of bringing diseases upon ourselves was reconcileable to a Christian conscience.—But, in spite of all such aids and supports, it daily sunk into disuse and contempt, and of late has scarce been mentioned among us; till our author, on a reliance on his mathematical skill, and a thorough acquaintance with the doctrine of chances, undertook to strike a new light, to open our eyes, and, by plain and easy calculations, to evince the reasonableness and security of it, *even to a demonstration.* Vain delusion! For if many have died in London when the incisions were made by the most skilful hands, and under the care and direction of the most eminent regular physicians, what (may we suppose)

suppose) will be the consequence! what a tragic scene shall we have! when this practice shall be brought into the country, and committed to common hands, men of less abilities, and no experience!—But from hence it appears, Providence *has given some persons heads to contrive and hands to execute any thing that will serve their own advantage.*”

For several years after this I find nothing professedly written on inoculation, which though not wholly in disuse, was certainly now very little practised. Thus Dr. Hillary, of Bath, who wrote an elaborate treatise on the Small-pox,* in the year 1735, remarks, that “inoculation made some progress for a short time; but as it has not always been attended with the success which its promoters wished for, its credit at present seems to be sunk at home; though in some of our American

* *A practical essay on the Small-pox*, by William Hillary, M. D.
colonies,

colonies, it is now practised with considerable success."* Although this author appears not to want candour and discrimination, yet it is remarkable, notwithstanding all the publications of Dr. Jurin, that he should still think the two following queries had not hitherto been answered in the affirmative :

“ 1st.—Whether the danger is less to have the Small-pox by inoculation, than to have them in the common course by a natural infection ?

“ 2d.—Whether to have the Small-pox procured by inoculation, is as sufficient a security against a second invasion, as it is to have them the natural way ?”

When these questions shall be decided in favour of inoculation, he says, “ It is probable this practice may one day be retrieved among

* This last remark was added to the second edition of his book in 1740, and alludes to the success of inoculation in Carolina, in 1738.—See p. 27.

us:" and further adds, " It may not, by the way, be amiss to observe that in general such only have been chose as proper subjects for inoculation, as were of healthful, good constitutions, and were likely to undergo the disease with most safety; whereas the distemper seizes others indiscriminately, if not those soonest whose constitutions are obnoxious to the most violent and fatal kinds, The computations therefore of the number of those who die of each sort, may probably be placed on a very unfair and unequal bottom."

This observation, which had been before made by Mr. Isaac Maffey, I should not have recited here, if it had come from a less respectable character than Dr. Hillary; for on the present subject, as well as on many others, the public is sometimes influenced rather by the opinion entertained of the man, than by the force of his reasons.

Dr. Deering,

Dr. Deering, at Nottingham, whose opposition to inoculation I should have deemed it unnecessary to notice, had not his pamphlet, entitled, “*An account of the improved method of treating the Small-pox, published in 1737,*” contained a striking fact, which has never been contradicted. He says, “I have, with pleasure read the several accounts of the progress and happy success of inoculation: but when I heard of some who had been inoculated in vain, no eruption ensuing; when I was an eye-witness of the inoculation of a little boy,* who notwithstanding the great care there was taken in the choice of the pus, had the confluent kind severely, and twelve months after had them naturally, and the favourable sort, yet was very full; when I met with many, and among them three in one family, miserably

* This boy was the son of Dr. Croft, and inoculated by Dr. Steigerthal, physician in ordinary to King George the First.

feamed and pitted; when it was known in several parts of London that some of the inoculated persons had lost their lives; I could not help fearing these things might do that method harm, as they contradicted the sanguine promises of some of the favourers of that operation."

During this retrograde state of inoculation in England, it began to make considerable progress in the transatlantic world. M. de la Condamine, in his account of his voyage to the River of the Amazons, relates, that a Carmelite missionary, near the Portuguese Colony of Para, in South America, seeing in the years 1728 and 1729 the Indians of his mission carried off by the Small-pox, to the loss of one-half of his flock, saved the remainder by venturing to inoculate them; though he had no other knowledge of this practice, than what he had learned from an European newspaper.

In consequence of his example, inoculation was adopted, and with equal success, by one of his fellow missionaries, on the Banks of Rio-Negro, and by some Portuguese inhabitants of Para.

In 1738, the Small-pox was brought from Africa, by a cargo of slaves, into South Carolina; where, from the beginning of June till the end of August, it proved exceedingly fatal. Mr. Mowbray, a surgeon, was the first who introduced inoculation into this province, and in a short time performed the operation upon 450 persons. He was soon seconded by Dr. Kirkpatrick: and other practitioners having witnessed the success of the practice, afterwards adopted it; so that the number of the inoculated in a short time amounted to 1000, or at least to 800 persons, including whites and blacks.—Six of the former and two of the latter died of the disease thus communicated.

When

When it is considered that these inoculations were carried on in an indiscriminate way, and during the summer heat of a climate where the sun is within nine degrees of the zenith at the solstice, the above result may be regarded as highly creditable to the artificial mode of producing the Small-pox, and it is said to have contributed in a considerable degree to its revival in Britain. Dr. Kirkpatrick wrote an *Essay on Inoculation*, published in London in 1743, with an appendix subjoined, in which the success of the practice of inoculation in South Carolina is related. But from the very defective statement given of the eight unsuccessful cases, the reader is unable to profit by a recital of them.

Soon after this time, the Small-pox was epidemical and very fatal in Philadelphia, when, according to report, inoculation proved even more favourable than it had been in
Carolina.

Carolina. We are also informed, that in the island of St. Christopher's, a planter, about the same period, inoculated 300 of his slaves, without the loss of one.*

All these accounts, contrasted with the great fatality of the natural Small-pox in Britain, tended much to revive and to propagate the practice of inoculation, so that after the year 1738, its reputation in this country was gradually restored. In Portsmouth, Chichester, Guildford, Petersfield, and Winchester, 2000 were inoculated about the year 1742, and, except two women who were both with child, and inoculated contrary to the advice of their physician, all happily recovered. At Salisbury, inoculation regained its credit very early, and was practised to a considerable extent: it appeared, however, about the year 1753, that four unsuccessful cases had occurred

* This is given on the authority of Dr. Mead.

out of 422 inoculations.* Mr. Frewen, Surgeon, at Rye in Suffex, was more fortunate, having inoculated 300 persons with the loss of only one: and of 400, who submitted to this practice at Blandford, in Dorsetshire, there was but a single instance in which it failed of success.† In London, also, inoculation was now very generally practised, especially by Serjeant Ranby, who, in 1751, had performed the operation upon upwards of 1000 persons. Serjeant Hawkins, and Mr. Middleton, Surgeon-General to the army, had likewise at this time inoculated 500. Out of the whole number of cases, attended by these eminent practitioners, only three terminated unfavourably. Another

* See Mr. Browne's letter in *Phil. Transf.* vol. 47. p. 570.

† However, twelve years afterwards, inoculation, at Blandford, proved very unsuccessful; for out of 384 persons who underwent this process, thirteen died.— See Dr. Pultney's account, in *Baker's Merits of Inoculation.*

Surgeon, Mr. Wincheſter, inoculated in the Foundling Hoſpital 186 children, of whom one died; and in private practice, this gentleman loſt only one perſon out of 370. This ſalutary art was now again reſumed even in Scotland and Ireland, where its ſucceſs ſoon repaired the loſs of reputation it had ſuſtained there on its firſt introduction.

Among the cauſes which at this period tended to promote the practice of inoculation, was Dr. Mead's publication on the Small-pox and Meaſles, in 1747; for, in a chapter expreſsly treating on inoculation, he brings many arguments to ſhew the advantages attending this new art. To the objection that inoculation did not produce the genuine Small-pox, and conſequently could not ſecure any one from having the diſeaſe afterwards, he makes the following judicious reply:—
“ Now, I own, I cannot underſtand how
contagion,

contagion, that is, the very seed of the disease, should produce not its own proper distemper, but another of a different kind. Neither, certainly, does it matter by which way the infection is received, provided it brings forth manifest marks of the disease. And as to those who, after having been inoculated with success, are notwithstanding this said to have suffered the Small-pox, I must protest that, after the most diligent inquiry, I have not been able to find out one convincing proof of this kind. But, to speak plainly, if such a thing happened once, why do we not see it come to pass oftener? Or what can a single example, supposing it to be true and certain, avail, when innumerable have produced nothing like it?"

Inoculation, according to Dr. Mead, was, in his time performed by making a very slight incision in each arm, and putting upon it a small thread of lint or cotton, impregnated
with

with the variolous matter. The practical observations which this author has made on the subject of inoculation are very few, and contain nothing sufficiently important to be noticed.

Two years after the publication of Dr. Mead's book *de variolis et morbillis*, Dr. Frewen, then a Surgeon at Rye, published *The practice and theory of inoculation, with an account of its success*. This gentleman having, as was formerly observed, inoculated 300 persons with great success, his pamphlet on the subject could not therefore fail of being well received, and very generally read. He informs us, that for the most part he found it necessary to employ some medicines, previously to inoculation. He says, "In a plethory, bleeding vomiting &c. ought always to be recommended; and in a puny habit, a light infusion of the bark, after a gentle vomit or purge, drank for some time, proves greatly

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beneficial.

beneficial. But in gross or violent habits I would always recommend a course of æthiops mineral, or cinnabar, with a milk diet for a month or six weeks, after plentiful bleeding and purging." Few of his patients were allowed animal food. Respecting the choice of variolous matter for the purpose of inoculation, he seems to have been the first who discovered that it was of little importance; saying, " Experience has convinced me, that it is in reality of no consequence from what kind of the Small-pox it is procured. I knew one and twenty persons inoculated, the same day, with matter taken from one who had a confluent Small-pox and died of it; yet these, notwithstanding, all had it in as favourable a way as could be wished for. And I have inoculated many more with matter of the malignant kind, without any manner of ill effect." He says also, " the inoculated parts, from the
appearance

appearance of the first symptoms, ought to be daily inspected, that we may lend our assistance, on occasion, towards hastening the separation of the eschars, and promoting the discharge in proper time: and this I look upon as a matter of the greatest consequence." During the whole course of the disease he kept the body open, and ordered the patient to drink plentifully of weak diluting liquids; and, in severe cases, had occasional recourse to opiates, cordials, and epispastics. He speaks very favourably of the good effects of drinking cold water in this disease; and it is more than probable, that the modern improvement, in treating inoculated patients, was in part borrowed from the following case: "I inoculated two of my own children the 24th of December; the eldest, though not then six years old, had the fullest Small-pox of any one of twelve inoculated at the same time: and though the pustules ap-
SECTION V. P 2 peared,

peared, on their first coming out, small and ill-conditioned, yet, by a plentiful dilution with cold water only, he kept himself constantly cool and quiet, without a fore throat or other troublesome symptom throughout the distemper; and by this means, without having occasion for any medicine whatever, mended daily the complexion of the pustules; filled and ripened them to the greatest perfection; so that he, though all over full of pustules, might be said to have passed through the Small-pox, without any real complaint: and this, I think, is to be attributed to the cold water only, as it kept him constantly cool and refreshed. I thought it right to signify this matter at large, as it is a thing of the greatest consequence in the management of the Small-pox, in order to take an opportunity of exploding what I am able, possets of sack and white wine."

SECTION V.

*Of the Establishment of the Inoculation Hospital
in London, and of the Introduction of Inocu-
lation into various Places on the Continent.*

THAT the public now began to form an high opinion of the advantages to be derived from the art of inoculating the Small-pox, appears by the institution of an Hospital in London, for the express purpose of inoculation. And as this charity contributed very essentially not only to the establishment of inoculation in England, but also in different countries on the Continent, I shall give a short account of its rise, and of its early progress.

The scheme of an hospital for the reception of persons casually infected with the Small-pox; with an additional one for inoculating the poor, was first proposed at a public meeting, held in the vestry-room of St. Paul's, Covent Garden, February, 1746; when, with the view of carrying the plan into execution, the following appointments were made:

PRESIDENTS.

His Grace Charles Duke of Marlborough.

Right Rev. Isaac Lord Bishop of Worcester.

VICE-PRESIDENTS.

Sir Hugh Smithson, Bart.

Sir Roger Newdigate, Bart.

The Honourable Colonel Bocland,

The Rev. Dr. Stephen Hales, F. R. S.

Sir Samuel Gower, Knt. Treasurer.

Dr. Robert Poole, Physician.

Mr. William Umfreville, Attorney, Secretary.

A small

A small house, in Windmill-street, Tottenham-Court-Road, was provided, and first opened for the admiffion of patients in July, 1746, under the name of “ the Middlefex County Hofpital for Small-pox.” Afterwards another house for the fame laudable purpose was provided in Bethnal-Green, near Mile-End Turnpike. A third house, fituated in Old Street, and intended for an inoculation hofpital, was likewise procured by the charity. The institution was encouraged by many people of the first rank both among the Clergy and Laity, fo that in October, 1747, the fubfcriptions to the Small-pox hofpitals amounted to £.1076.

The house in Windmill-street, only containing thirteen beds, was soon found insufficient for the accommodation of one half of the petitioners for admittance into this scanty afylum : therefore the lease of a more commodious

building, in Mortimer-street, Cavendish-square, was purchased; and at the same time the hospital in Bethnal-green was adapted for the reception of forty beds. However, in consequence of complaints respecting the injury suffered by several inhabitants of the neighbourhood of these houses, the charity, on receiving a compensation from the complainants, for the expence of fitting up the hospital in Mortimer-street, relinquished this building, and established the Small-pox hospital in Lower-street, Islington. Thus, in 1750, we find, by the annual account of this charity, that the hospital for Small-pox and Inoculation consisted of three houses, viz. One for preparing the patients for inoculation in Old-street; another in Frog-lane, Islington, for receiving them, when the disease appeared; and a third in Lower-street, Islington, for the reception of patients labouring under the natural Small-pox.

Dr. Archer succeeded Dr. Poole as physician to these hospitals in 1748; and shortly afterwards a committee was appointed for the purpose of promoting the plan of inoculation. This committee was composed of the Duke of Marlborough, the Earl of Mansfield, Lord Viscount Londale, the Bishops of Worcester and Chichester, Sir Hugh Smithson, Bart. Sir Wm. Beaucham Porter, Bart. the Honourable Edward Southwell, the Honourable Richard Temple, Dr. Hales, Dr. Hoadley, Dr. Archer, Mr. Serjeant Hawkins, and Mr. Harrison. But various circumstances for some time prevented the design from being executed to any considerable extent. Whence in the middle of the year 1750, although there had been 620 cases of natural Small-pox under the care of the charity, only 34 persons had at that time been admitted to receive the benefit of inoculation; nor was it until after the year 1751 that

that this practice was regularly carried on in the hospital, as will appear from the statement subjoined, which exhibits the number inoculated in each year, till the new inoculation hospital was completed at Pancras in 1768.

Inoculated before the month of Oct. 1749,—17

From Oct. 1749, to Oct. 1750,—29

From Oct. 1750, to Dec. 1751,—85

In 1752	112	In 1761	429
1753	129	1762	496
1754	135	1763	439
1755	217	1764	383
1756	281	1765	394
1757	247	1766	633
1758 & 1759,	446	1767	653
1760	372	1768	1084

In all 6581.*

* The unsuccessful cases which occurred out of these numbers, are mentioned in another part of this work: they were nearly in the proportion of one out of 250.

At this early period, inoculation was a very tedious process; and by the unnecessary precautions at first employed it was attended with many difficulties. During the infant state of the hospital, a preparatory course of medicines and diet, for one month previous to inoculation, was constantly enjoined: and that the patients under this preliminary state should not casually receive the variolous infection from others already inoculated, it was thought expedient not only to inoculate all the patients on the same day, but, as soon as the distemper appeared to send them to another house, provided for the purpose, where they remained about a fortnight longer before their final discharge. Since then each set of patients occupied the hospital of preparation six weeks: and seven or eight days more were required for clearing and ventilating the house, inoculation could not be undertaken oftener than

once

once in seven weeks; and the persons who availed themselves of it were obliged to submit to the inconvenience of two months confinement, at a considerable expence to the charity. The names of those authorised to be received into the hospital were, upon application to the Steward, entered in a register, and on the periodical day of admiffion (of which notice was given in the public prints), they were fummoned to appear at the house of preparation, when a number of the same sex, fufficient to occupy all the beds in the house, were felected for inoculation. However, as only fifteen patients could be accommodated there at the same time, the Charity, in 1752, purchafed a fpacious building in Cold-bath-fields, which the following year was appropriated both for the reception of patients labouring under the natural Small-pox, and alfo for thofe in whom the difeafe had been
inoculated

inoculated at the house of preparation. It was accordingly divided into six wards, and provided with 130 beds. By this measure the charity was in possession of two houses of preparation: and consequently inoculation at the hospital was now annually extended to nearly double the original number.

The new hospital, like the former houses employed for the purposes of this charity, was not established without much opposition. The church-wardens and overseers of the poor of the parish of St. James's, Clerkenwell, moved the Court of Chancery for an injunction, to restrain the trustees of the hospital from receiving any person affected with the Small-pox into the house then preparing for that purpose: but the Lord Chancellor declared in answer, that as the hospital was of great public utility, and had not been proved a nuisance, he should refuse to grant the requisition.

fition. For a long time, however, the prejudices against the hospital were so great, that the patients on leaving it were abused and insulted in the street; wherefore they were not suffered to depart until the darkness of the night enabled them to do it unobserved by the populace. But this violent prejudice against inoculation was now, in a great measure, confined to the lower class of people; for with those of higher rank, and of more enlightened minds, it had been long done away, not only by the great success of the practice itself, but by means of the powerful patrons it had gained among the heads of the church.

Dr. Maddox, Bishop of Worcester, who accepted of the office of President of the Small-pox hospital, on its first institution, was a zealous and able advocate for inoculation. In an excellent argumentative sermon, preached for the benefit of the hospital, he placed the
advantages

advantages of this salutary art in a very forcible light: and it is remarkable, that this discourse, in 1752, was delivered from the same pulpit, in the church of St. Andrew's, Holborn, as that preached thirty years before by Mr. Maffey, who then reprobated inoculation as the most diabolical practice that ever was admitted into a Christian country. But how contemptible does the ranting of this intemperate bigot appear, when contrasted with the rational discourse of the philosophic and enlightened Christian, whose sermon in defence of inoculation; even at this time, cannot fail to be admired; I shall therefore make no apology for presenting the following extract from it:

“ Now, the general view of the present charitable undertaking, is, with God's blessing, to render this grievous distemper less destructive, and diminish that horrid devastation
which

which it now continually makes among the the human species.

“ And the relief here propos'd to the poor, is accordingly pursued by two different methods; the one is, as it were preventive, to lessen the violence and the danger of this malignant disease; the other is to supply indigent distressed, parents, who actually labour under it by common infection, with all necessary assistance and relief. The aim of the previous method is this, *viz.* after due preparation, in a known visible manner, to raise that commotion in the blood, which sends forth into the surface of the body the latent materials of this distemper, so very dangerous when excited in the common way by infectious particles unperceived. It seems therefore (like the raising a fit of the gout, when the particles of that painful malady are dispersed thro' the whole mass of blood) not so properly the giving a
distemper

distemper to a human body intirely free from and out of danger of that distemper, as choosing the safest time and manner of causing a disorder, otherwise almost unavoidable in a way extremely more pernicious, the fuel thereof being lodged within us. An intention beyond all dispute worthy of much approbation; and which should always be pursued with the utmost care and precaution, both in the choice of the person from whom the infectious matter is collected, and of unexceptionable subjects, upon whom the operation is performed.

“ It is needless to enter into a disquisition, which is the properest method of designedly raising this disorder in the human frame, by carrying the person that is to receive it to the contagious steams or effluvia; or, bringing to him the infected matter. Religious difficulties (if any still remain concerning a practice that

has preserved so many lives, and prevented the heaviest grief in so many families) are exactly the same, in either method of voluntary communication.

“ For it is no more invading the prerogative of heaven, to occasion one easy and voluntary conveyance of the infection, than another; by a slight and hardly sensible rasure upon the skin of the arm, than communicating the same distemper, by invisible particles, to that tender organ the lungs, which are so frequently affected by the venom of this disease, when contracted by the breath, or receiving into the body infected particles in what is called the natural way.

“ Were this preventive method universally successful, and never once to fail in any instance whatsoever, it is scarce to be presumed that any objection would be raised against a salutary expedient, to preserve from destruction

tion

tion so great a part of the human species, as daily fall by this mortal enemy, when it attacks men as it were in the dark, ignorant of, and unprepared for the assault.

“ This method of inoculation would then be no more liable to censure, than the making a voluntary wound, by incision, to form a necessary drain; or administering any operative medicine, which upon repeated trials had proved an unfailing security against any other dangerous and prevailing pestilence or contagion:

“ But, in order to excite and secure a dependence upon his Divine Providence, the Great Governor of the world has appointed that no human affairs, not even our necessary sustenance, should be attended with such absolute certainty: a very wise appointment! that vain man might not fancy himself an independent being; but among all the changes

and chances of this mortal life, should still look up unto, because he can only be defended by, God's most gracious and ready help.

“ Experience alone must determine the good or bad consequences of this artificial infection, as it ought to do in all other medical attempts, which in many instances are, in reality, little more than curing or alleviating one distemper by exciting or introducing another. And in this view the method, now under consideration, of lessening the hazard of a very mortal disease, should be considered in the same light as every other antidote or preventive attempt in physic or surgery, against any probable, almost certain malady, internal or external.

“ I forbear therefore to derive any strength to the argument, from the great number of noble, venerable, and worthy persons of every rank and profession, who appear the public
advocates

advocates of this compaffionate defign: let it stand upon its own proper evidence, and foundation.

“ A fafe paffage through this diftemper, like the emancipating flaves, is a deliverance to vaft numbers of people, kept as it were in bondage; who, before they have undergone this abhorred difeafe, are excluded from many offices of life, and prevented from purfuing their neceffary bufinefs; and it gives tranquillity and cheerfulness to perfons of better condition, who, under apprehenfions of this loathfome and infectious diforder, were all their former days fubject to great anxiety and conftant fear.

“ It is needless to enter into a difcuffion of feveral objections, that attended the infancy of this ufeful practice, which time and fuller experience have now removed; with refpect to the communication of other difeafes with

the variolous matter; or that certain ails and complaints have followed the inoculated distemper; of both which inconveniencies there is at least an equal hazard upon infection, by an unperceived contagion, that, like a pestilence, walketh in darknes: or that the disease is more likely to return after inoculation. The large experience of many years has now effectually removed all these objections, nor can it be wondered at, if, in the infancy of the practice especially, some few attempts have proved ineffectual.

“ Beyond all dispute, in the voluntary communication of this disease, there is an happy opportunity to choose—the best season of the year—the early, the properest time of life—a juncture when the disease itself is most favourable, and the blood is in a right state to receive it, neither too much enriched, nor too much impoverished—to prevent treating
the

the first doubtful symptoms in an improper manner—to avoid cold, or inflammation of the blood, by food, liquors, or exercise, after the known infection is received.

“ But to proceed to the only sure evidence, real experience and matter of fact; in which almost every part of the globe, Asia, Europe, and America give a concurrent testimony—Great Britain in particular has now had a trial of this voluntary method of artificially exciting the distemper for near thirty years at different times, and distant places, with very great success.

“ At first, indeed, in this, as in other very useful articles, the success was far inferior to what longer experience, and repeated trials have now so happily accomplished in this metropolis, as well as in diverse other places, particularly in that useful establishment formed for the reception of deserted young children;

and more especially in this hospital peculiarly instituted for this good purpose, being one branch of the charity for which we are now assembled.

“ Besides this general evidence of the advantages of inoculation, I can speak with more assurance upon the beneficial effects of that operation, because I speak upon full information, and by the permission of three gentlemen in particular, of deserved eminence and distinction in the profession,* who have been very largely employed for a considerable time, in this salutary practice. It cannot therefore fail to give this worthy audience much satisfaction, to be thus authentically assured ;

“ I.—That the artificial communication of the Small-pox by inoculation, is, almost with-

* Mr. Serjeant Ranby, Mr. Serjeant Hawkins, and Mr. Middleton.

out exception, an effectual security against that dangerous symptom the second fever, which destroys so great part of those who perish in the natural way.

“ II.—That under inoculation, there is scarce any difficulty in breathing, or complaint upon the lungs; which disorder produces so many bad effects, when the distemper is received in the unknown and accidental manner.

“ The III^d and most material article is the great and happy success, as to numbers, with which God’s good providence has blessed this useful operation; great, beyond the most sanguine hopes; so great, that in above fifteen hundred persons inoculated by these eminent hands, only three have died: and this very material fact is also confirmed by unexceptionable accounts from diverse other places.

“ But

“ But that a matter of such importance may be brought to some apparent certainty, it may not be improper to enter a little into calculation.

“ From the annual account within the bills of mortality (in which many places in and near the city are omitted) it appears, that in twenty years, viz. from the year 1731 to the year 1750 inclusive, no less than 39,115 persons have died of this fatal distemper; which, including the places not inserted in the weekly bills, must be considerably more than 2000 every year, that fall in the two adjoining cities and parts adjacent.

“ And if only one in seven (which is a very sufficient allowance) is supposed to die by the distemper taken in the natural way, then the whole number of persons who in this period of twenty years have been thus infected, amounts to two hundred and eighty thousand,
and

and of these no less than forty thousand have perished.

“ But if one in every two hundred should be supposed to die under inoculation, which, as observed already, is really much more than fall by that artificial infection, now continually advancing with increasing safety; and the certain fact, as above mentioned, is only one in 500, being less than half of the number I have stated—but suppose, I say, one in 200 to die under inoculation, then had this artificial method of conveying the distemper universally taken place, instead of that prodigious destruction of mankind, 40,000 in the space of twenty years in one district, no more than 1400 had perished; and the difference, in that short period, would have been no less than thirty-eight thousand six hundred lives preserved, besides the numerous posterity that might have been derived from them. And
were

were this practice universal in these two cities only, nineteen hundred and thirty lives, under the blessing of God, would be annually preserved.

“ It is a pleasing observation, that the slaughter made by this formidable distemper is greatly decreased; the numbers as recorded in the yearly bills, being one-fifth lessened since this practice has prevailed.

“ Facts like these, speak so strongly and so clearly, that reasoning and argument must be quite superfluous, to excite your generous and ample contributions, which are absolutely necessary to carry on and extend this great, this compassionate, this national undertaking.— Humanity, regard to our country, the dictates of reason, and the precepts of religion, would awaken your generous sentiments at any juncture; but especially at this unhappy period, when debauchery and vice, with the
most

most destructive and as it were pestilential intemperance, are making such daily and dreadful havock among the inhabitants of this island, as renders every design, every attempt to preserve the lives of the people, extremely seasonable, and to the highest degree necessary!

“Those, in particular, who have themselves, or whose children have, by God’s great goodness, safely passed through the dangers of so destructive a distemper, by this happy expedient; those also who are desirous to obtain the divine blessing when the experiment is made in their own family, cannot fail to exceed in bounty, that the lives of the poor (of great regard in the sight of God) may also be preserved.”

An open vindication of inoculation, by this philanthropic prelate, had an happy effect in
removing

removing the religious scruples that many entertained, with regard to the exercise of this art; while his reasoning could not fail to convince numbers of its real utility. The sermon, by passing through seven editions, must have had a very general circulation, and have thereby been of considerable use in diffusing a just knowledge of the practice of inoculation among all ranks of people; as well as in promoting the interest of the charity, for which end it was peculiarly designed. Nor did the success of inoculation in the hospital, disappoint the hopes and zeal of its patrons; for it appears, that out of 593 cases of persons successively inoculated, from the year 1751, only one proved unfavourable.

From this time, inoculation made an uninterrupted progress, though the clamour of
opposition

opposition to it was far from being silenced. In 1751, was published, "*A discourse against inoculating the Small-pox, with a parallel between the scripture notion of divine resignation, and the modern practice of receiving the Small-pox by inoculation;*" in which the anonymous author does not dispute the general success of the practice, but declares it to be contrary to moral rectitude, and to the principles of revealed religion. However, the arguments which he adduces, and the numerous texts of scripture which he quotes, are so vague and inapplicable, that it is not possible to conceive how they can be made to serve his purpose. But lest these remarks should be thought unjustly severe, I shall quote a specimen of his reasoning, founded upon the comparison of a hunted hare, with a person attacked by the Small-pox. "Did you never observe (says he) with a mixture of admiration and pleasure,

with

with what art the hare doubles to elude the crying death just opening upon her:—

Ut canis in vacuo Leporem cum Gallicus arvo
 Vidit; et hic prædam pedibus petit, ille salutem:
 Alter inhæfuro fimilis, jam jamque tenere
 Sperat, et extento stringit vestigia rostro:
 Alter in ambiguo est, an sit deprensus; et ipsæ
 Morfibus eripitur; tangentiæque ora relinquit.

“The poet’s description is extremely beautiful, nor is the manner of the sprightly animal less so. Who does not commend puss for it? Is she not in the right of it? And does she not act up to the dignity of her nature, and the degree of instinct implanted in her?—Apply this to the case before us, and the ratio of the proportion will stand thus. Let *John* represent the person hunted; and let A. B. C. D. E. F. G. &c. down to Z. represent the pack of dogs, *i. e.* the number of pocks, or the degree of danger to which he is exposed. Now what a poor pitiful condition is John in.

Is

Is not the man put to his wits end, as the saying is? And does it not behove him to turn here and there for safety? To lie ignorant now, would argue unwarrantable presumption, and not faith. No means can be illicitly used by which he may extricate his neck out of the halter. The sentiment and authority are both borrowed from a line in Horace, where the poet puts these words in the mouth of the miser:

— *Quærenda pecunia primum,
Virtus post nummos.*” *

Whether this be termed raillery, reasoning, or conceit, it is equally contemptible and obscure: so far indeed as relates to the subject proposed, it seems a matter of indifference whether the pamphlet had been entitled a *persuasive* or a *dissuasive*.

A more strenuous and powerful opponent of inoculation appeared in the Rev. Theodore

* See page 41.

De la Faye, Rector of St. Mildred's, and All Saint's, Canterbury. In a sermon, entitled, "*Inoculation an indefensible practice,*" preached at the two churches of which he was the rector, and published in 1753, this reverend author asserts, "that it will be hard to produce, out of the huge system of hurtful inventions, ever an instance big with more infidelity and atheism than this of inoculation." He does not, however, confine himself to religious and moral objections, but, like his predecessor Massey, furiously storms inoculation at all points; affirming, "that it secures us against no one danger we are in the natural way exposed to; affords no one real advantage that may not be had in the common management of the disease; and is subject to many inconveniences and evils, which in the regular course of things we are either quite free from, or but slightly affected with. — It may be maintained,

maintained, that adults, if naturally of a good constitution, and such that have not impaired that constitution, or are not at the time under any bodily indisposition occasioned by intemperance, or other vices, have as good a chance for their life in the *natural*, as children have in the *unnatural* way, and perhaps a better. As to the cure which inoculation furnishes for those fears persons are apt to be under till they have gone through the trial, and the certainty of the disease proving in this way less severe and less mortal; these, though urged as singular recommendations of this practice, seem however to be no better than mere pretences. There is then most evidently no one peculiar real advantage gained by submitting to this deceitful trial; nor any the least security against the dangers incident to the distemper in the natural way." *

* See page 23.

Had this zealous preacher limited his discourse to a religious or casuistical examination of the subject, it might be supposed that he had not exceeded the duty of his function: but by the assertions above cited, and many others of the same import, equally groundless and unwarrantable, it is fair to judge of his principles of action, with reference to the precepts of the gospel, in the same manner as he does of the advantages of inoculation; and to say with him, "*that they seem to be no better than mere pretences.*"

De la Faye's sermon was answered in a letter addressed to him, written by Mr. Bolaine, a surgeon, and in substance also by Dr. Kirkpatrick, in his "*Analysis of Inoculation;*" to both which Mr. De la Faye rejoined in "*A vindication of a sermon, intitled, Inoculation an indefensible practice, in which Dr. Kirkpatrick's arguments in favour of the operation, together*

with

with his and a certain letter-writer's objections to the sermon, are distinctly considered and replied to, and the practice demonstrated in the amplest manner, highly culpable in a moral, and extremely absurd in a physical view."

To give an adequate idea of this elaborate performance, would far exceed the plan I propose to follow in the present historical sketch; nor indeed, though properly executed, would it be thought of much importance to the reader.

This vindication is not simply a defence and amplification of the sermon, but combats the practice of inoculation on new grounds and principles. In the prosecution of his subject, the author does not even spare the Bishop of Worcester. And to shew that he has studied medicine as well as divinity, he produces, in support of his doctrine, many quotations from medical books, which, toge-

ther with the scraps of Latin and Greek every where interlarded, render the whole a singular medley of physick and divinity, of Christian and Heathen learning. Nay, the reverend writer does not forget his metaphysics on this occasion, but endeavours to prove the immorality of inoculation by the following tests: "Every agent should act with peculiar regard as well to the rank he holds in the subordinate chain of beings, as to the reach and intention of the several powers he has been entrusted with. It is another rule, not less evident, that all things that surround us should be treated according to their innate properties and tendencies. It is still a further establishment, that all diseases should serve for the support of virtue, and the consequent certain procurement of man's happiness, whether connected immediately with his moral conduct, or incidentally effected by divine dispensation. In fine, it is an incontrovertible

trovertible prescription, that the cure of distempers, with the removal of their consequences, should be brought about by means, in their material constituents (where such are used), and in their operation and end, totally different from, and directly opposite to, the evils to be removed. But now who sees not with half an eye, that inoculation is absolutely incompatible with every one of these divine appointments." *

How far this will be deemed a demonstration of the moral culpability of inoculation, as the author terms it, I leave to the judgment of the reader; or if he feels interested in the subject, can refer him to a pamphlet, written by Mr. Bolaine,† wherein the whole of De la Faye's doctrine is satisfactorily answered.

* Page 15.

† *Remarks on the Reverend Mr. De la Faye's Vindication of his Sermon, entitled, "Inoculation an indefensible practice."*

Although inoculation had to encounter the reproaches of the Reverend Mr. Maffey, and the Reverend Mr. De la Faye, still the weight of clerical authority, at this period, greatly preponderated in favour of the practice.

The sentiments of the Reverend Dr. Mather, and those of the Bishop of Worcester, have already been noticed; and to them may be added the opinions, in defence of inoculation, published by those respectable divines, Mr. David Some and Dr. Dodderidge. The M.SS. of the former, though written in 1725, were not published by the latter till 1750, when they appeared in a pamphlet, entitled, "*The case of receiving the Small-pox by inoculation impartially considered, and especially in a religious view; written by the Rev. Mr. David Some, of Harborough, and published by P. Dodderidge, D. D.*"—The Editor's sentiments are stated in the preface, where he says, "I have
long

long been firmly persuaded in my own mind of the lawfulness and expediency of inoculation, as tending greatly to the preservation of human life. I have never known a single instance in which a child has miscarried by it. I have seen, or been most credibly informed of, a multitude of instances, in which grown persons have passed through it safely and very comfortably; who must, humanly speaking, have run the greatest imaginable risk if they had met the distemper in the natural way.

“The chief objections which prevail against the practice are, so far as I can learn, of a religious nature; and these are handled more particularly in this little treatise than in any other I have heard of: I could not therefore suppress it any longer, especially as I think it probable, that the high veneration with which the worthy author of it, Mr. Some, is still remembered, will engage it more favourable regard.”

Inoculation

Inoculation was now spreading gradually over the whole kingdom, while in the metropolis it received the decided approbation of the College of Physicians, and at the same time a further proof of the confidence reposed in it by the illustrious family upon the throne.

It had been determined in 1754 to inoculate the three Royal children who had not yet been affected with the Small-pox. In the mean time his present Majesty, then Prince of Wales, took the disease casually, so that only two of them, Prince Edward and the Princess Augusta, were inoculated, which was done with variolous matter taken from the Prince of Wales.

But what tended still more effectually to establish general inoculation, was the subsequent declaration of the College of Physicians, *viz.* THE COLLEGE HAVING BEEN INFORMED, THAT FALSE REPORTS CONCERNING

THE

THE SUCCESS OF INOCULATION IN ENGLAND, HAVE BEEN PUBLISHED IN FOREIGN COUNTRIES, THINK PROPER TO DECLARE THEIR SENTIMENTS IN THE FOLLOWING MANNER; viz. THAT THE ARGUMENTS WHICH AT THE COMMENCEMENT OF THIS PRACTICE WERE URGED AGAINST IT, HAD BEEN REFUTED BY EXPERIENCE; THAT IT IS NOW HELD BY THE ENGLISH IN GREATER ESTEEM, AND PRACTISED AMONG THEM MORE EXTENSIVELY THAN EVER IT WAS BEFORE; AND THAT THE COLLEGE THINKS IT TO BE HIGHLY SALUTARY TO THE HUMAN RACE.”*

* The words are as follow:—“ Quoniam collegio nuntiatum fuit, falsos de variolarum insititiarum in Anglia successu et existimatione apud exterarum gentes nuper exiisse rumores, eidem collegio sententiam suam de rebus hisce ad hunc modum declarare placuit: videlicet, argumenta, quæ contra hanc variolas inserendi consuetudinem in principio afferebantur, experientiam refellisse; eamque hoc tempore majori in honore apud Anglos haberi, magisque quam unquam antea inter eos nunc invalescere; atque humano generi valde salutarem esse se existimare. *Vide Taylor Orat. Harv.*

Having

Having traced the progress of inoculation in England to that period in which its success had silenced the principal opposers to it, and when also many other nations, following the instructive example of our countrymen, had been induced to adopt it, I shall here digress so far as to give a short account of its introduction into various places on the Continent.

Dr. Boyer is the first French writer who has noticed inoculation; and he may certainly be considered as an advocate for the practice, since in 1717, at Montpellier, he stated the reasons which appeared to him sufficient to explain why the Small-pox should be more favourable by inoculation than by casual infection.

Six years after this time, *i. e.* in 1723, the successful trials of inoculation in England were published at Paris in a letter from Dr. de la Coste to Dr. Dodard, with the licence
and

and approbation of Dr. Burette of the faculty at Paris. In this pamphlet Dr. Jurin's first statement respecting inoculation is given; it is also said, that nine of the principal doctors of the Sorbonne were consulted on the subject, and that the author had the satisfaction to find them agree in this conclusion, *that for the benefit of the public it was lawful to make trials of inoculation.** Besides Boyer, De la Coste, and Dodard, other celebrated members of the faculty of Paris, Chirac, Helvetius, Astruc, &c. thought highly of the utility of this new practice, and, according to De la Coste, wished to see it introduced at Paris. Their opinions, added to the concurrence of the theological doctors of the Sorbonne, and the adoption of inoculation in England by the Royal Family, induced the Parisian physicians to think of

* " J'eus la satisfaction de les voir enfin conclure, qu'il étoit licite, dans la vûe d'être utile au public, de faire des expériences de cette pratique."

beginning the practice in their hospitals; for which they had the approbation of the Duke of Orleans, then Regent of France. But, unfortunately for the experiment, the Duke Regent died at this time; and soon after Dr. Hecquet published his "*Raisons de doute contre l'inoculation,*" in which he carries his abhorrence of inoculation so far, that he does not even think the practice of it upon trees altogether warrantable. Among his chief arguments are the following: "Its antiquity is not sufficiently ascertained; the operation rests upon false facts; it is unjust; void of art; destitute of rules; it does not carry off the variolous matter; it has a double stamp of *reprobation*, it runs counter to the Creator's views, and does not prevent the natural Small-pox; it is contrary to the laws; it bears no likeness to physic; and favours strongly of magic." Such are the reasons of Dr. Hecquet,

to whose book Dr. Burette, the royal censor, in his approbation, paid no great compliment, when he declared, that the observations it contained were *perfectly consonant to the ancient medical practice*. This work was succeeded by a thesis still more hostile to inoculation, viz. "*An variolas inoculare nefas?*" *Quæstio medica in scholis medicorum, 30th Dec. 1723,* in which the operation is deemed criminal, the patients dupes; and the inoculators are called impostors and executioners. By the sentiments conveyed in these publications, concurring with the reports of the bad success of inoculation at Boston, and of the great mortality of the natural Small-pox in London, in 1723, falsely ascribed to the introduction of inoculation, the favourable opinion of this practice in France was completely done away, and the intended trials of it at Paris were postponed.

A translation

A translation of Dr. Jurin's first papers on inoculation, by Noguez, who prefixed to them an apology for inoculation, although approved by the censor in July, 1724, was not published till 1725: and in the same year the *Journal des Savans* gives only a short and imperfect account of Dr. Jurin's proofs of the advantages of inoculation, while the unsuccessful cases are fully detailed, and the narrative is concluded by a long extract of the arguments employed against the practice by Dr. Wagstaffe. Under all these representations, the art of inoculation sunk into so much discredit, that it excited no further notice for many years; nor did it again call the attention of the French nation till the year 1752, when Dr. Butini, a physician of Montpellier, published at Paris his "*Traité de la petite verole communiquée par l'inoculation.*" Two years afterward M. De la Condamine read his excellent memoir
upon

upon the advantages of inoculation before a public assembly of the Royal Academy of Sciences at Paris. But the practice was not introduced into France till the First of April, 1755, when, at the desire of Mr. Turgot (le maître des requêtes) a child, four years of age, was inoculated at Paris. On the 14th of May, Monf. Chastellux submitted to the operation; and as this gentleman was then twenty-one years of age, he is to be considered as the first person who voluntarily underwent inoculation in France.* Dr. Hosty was at this time in London, attending the Small-pox and Inoculation Hospitals, at the request of the French minister, in order to acquire a competent knowledge of inoculation, and of the peculiar

* According to Eller (*Obs. de cog. & cur. Morb. p. 152.*) a child was inoculated at Paris, by a Greek physician, named Carrazza, in 1719. However, this transaction seems to have been kept secret at the time, and was not published till forty years afterwards.

advantages it afforded. After three months residence here, he returned to Paris, and published the following report:—"That out of 463 cases of persons last inoculated in the Hospital, only one had been unsuccessful; whereas, in the Small-pox Hospital, it appeared by the registers, that nearly one in four had died of the natural Small-pox."—"That Mr. Ranby, principal surgeon to his Majesty, had inoculated 1600 persons; and that Mr. Bell, pupil to Mr. Morand, had inoculated 903, without the loss of one."—"That in order to form a just comparative view of the fatality of the inoculated, and of the natural Small-pox, it is only requisite to visit the two hospitals in London; the difference of their reports being so remarkable, that it must convince the most incredulous, of the advantages of inoculation."—Lastly, "With respect to the inoculation of other diseases

diseases along with the Small-pox, that no instance of the kind has ever been produced; and that persons have been inoculated with variolous matter taken from a patient affected with the venereal distemper, yet have thereby received the infection of the Small-pox only.”

Such is the substance of Dr. Hofty's report, as published in the various literary journals of France, and which is said to have contributed greatly to the promotion of inoculation in that country. Thus the family of the Duke of Orleans was inoculated in the following spring by Dr. Tronchin, who, in conjunction with Dr. Hofty, Dr. Kirkpatrick, and others, likewise performed this operation during the year 1756 upon many others of the first rank at Paris. In 1758, inoculation had extended into various parts of France: it was practised at Nismes, Lyons, Bourdeaux, Nantes, Rennes, Angers, and some other places. Still, however, the

number of the inoculated was not very considerable; and one or two unsuccessful cases occurred, which were much exaggerated: these, together with various false reports, stating that some persons, after having undergone inoculation, had been attacked with the natural Smallpox, conspired to discredit the practice, and to excite a controversy, in which the opposite parties were many years engaged. The Smallpox, which spread with great fatality at Paris in the year 1763, was ascribed to the introduction of inoculation; and hence the Parliament issued an *arrêt*, prohibiting this practice in that city: and the following year, notwithstanding all which had been written on inoculation, the Faculty of Physic, and that of Theology, were called upon to determine whether this practice ought to be tolerated or proscribed. This measure, however, rather promoted than silenced the contentions about inoculation;

new disputants came forward on both sides of the question;* and the art of inoculation continued till within these few years to be very partially practised in France.

In HOLLAND, inoculation was begun at Amsterdam in the year 1748, by Dr. Tronchin, who, on finding one of his sons seized with the natural Small-pox, immediately inoculated the other. This physician, after his return from Geneva to Holland, in 1754, inoculated a considerable number of persons, among whom some were of the first respectability in the republic. At this time also,

* Hence, in 1764, M. Gatti says,—“ C’est à Paris qu’on a fait le plus d’ouvrages sur l’inoculation, et c’est à Paris que l’inoculation a fait le moins de progrès. C’est à Paris qu’il y a peut-être encore moins d’inoculations de faites, que de brochures pour ou contre l’inoculation.”—*Réflexions sur les préjugés qui s’opposent aux progrès & à la perfection de l’inoculation.* p. 5.

M. Chais, a clergyman at the Hague, published an excellent defence of inoculation;* and Dr. Schwenke, the Professor of Anatomy, and several other physicians of eminence in that country, gave their suffrages in its favour, and by their practice of this new art, contributed still more to establish it among the Dutch. At Rotterdam likewise, a society of physicians and surgeons, in 1757, united in recommending inoculation, as appears by a publication,† in which the history and success of this practice in Holland, and other countries, are fully stated. Inoculation among the Dutch, was, however, for several years, confined to the higher class of people; but at length having been successfully practiced, especially by Morand at Amsterdam in 1764, and on many persons about the same time at the Hague, it was soon afterwards brought into general

* See *Essai Apologétique*, &c.

† It is written in the Dutch language.

esteem. Indeed, the number of people who came to the latter place to be inoculated was so great at one time, that the magistrates, afraid of the consequences of accumulating the contagion, absolutely prohibited the inoculation of strangers there in future. Another circumstance which might tend to inspire the Dutch inoculators with additional confidence, was the publication of the thesis of an American graduate at Leyden,* in which it is stated, that out of 8327 persons, who had been inoculated in Pennsylvania and the neighbouring provinces, only 19, or one in 438, had died.

This practice was first introduced into DENMARK by Dr. D'Argent, who, in consequence of his having superintended the inoculation of Baron Ranzaw, his Danish Majesty's Ambassador at the British court, was called to Copenhagen, to inoculate the Countess of

* *Tennet, De infectione variolarum. a. 1764.*

Bernsdorff, in September, 1754. Soon afterwards inoculation seems to have made a rapid progress in that kingdom, as appears by a memoir on the subject, by Dr. Berger. In 1758, his Danish Majesty, with a regard for his indigent subjects truly paternal, appropriated an annual sum for defraying the expence of inoculating the children of the poor. For this purpose, two houses were opened at Copenhagen, in which inoculation was conducted with a success worthy of the patronage it had obtained. In order to manifest to the people the safety of this operation, the King permitted the Prince Royal to be inoculated, in 1760, who passed through the disease in a very favourable manner. Nor was inoculation confined to the metropolis of Denmark: it was practised in different parts of the kingdom; and its success was repeatedly announced in several publications.

The

The first trial of inoculation in SWEDEN was made by Haartman, in 1754; and in the same year four persons were inoculated by Professor Auriuillius,* at Upsal. After the year 1755, their example was followed by Haft, D. Schultz, Acrel, Bergius, Westman, Odelius, Rozenstein, and other physicians of the first reputation. However, the rapid progress of inoculation was principally owing to the zealous encouragement of the Swedish court; from whence Dr. D. Schultz was deputed to inquire into the plan and success of the inoculation hospital in London, where he was a long time the diligent pupil of Dr. Archer. On his return to Stockholm, in 1755, his representations of the advantages attending the artificial method of exciting the Small-pox, were so well received, that houses

* See Professor Murray's *Historia institutionis variolarum in Suecia*. p. 57.

were established in different parts of Sweden, on the plan of the London Inoculation Hospital. By the great success of these institutions, aided by the instructive publications of Dr. Schultz, the benefits of inoculation were soon perceived and acknowledged throughout the Swedish nation; and were thought worthy of commemoration, by a medal, which was struck at Stockholm in 1757.*

Inoculation, as we learn from M. Tiffot, was first introduced at GENEVA, by Guyot, who, in 1751, inoculated Counsellor Calendrini; and soon afterwards four children in

* The medal here alluded to, is ornamented with suitable emblematic devices. The legend is

Sublato jure nocendi.

On the reverse is written

Ob infantes civium felici auso servatos.

Within a civic crown is seen the name of the Countess De Geers, the first Swedish Lady who had the resolution to permit her children to be inoculated.

that

that city. From this time inoculation made a gradual though slow progress. In 1752, we find that the number of persons inoculated at Geneva amounted to 33; in 1754 to 80; in 1758 to 200; and in 1765 to more than 400. The great success of this art, however, effectually established its practice in the Genoese territory: nor to the present time has any country had more repeated proofs of its important utility.

From Geneva inoculation passed into SWITZERLAND, in 1753; being first employed at Lausanne by a lady who inoculated her own child. M. Tiffot, author of *L'inoculation justifiée*, likewise inoculated, at the same place, in the year 1756, forty-two patients, all of whom recovered without having any alarming symptom. The practice proved equally favourable at Neufchatel, and at other towns in Switzerland. At Berne, in 1757, Baron Haller, then

then President of the Academy at Gottingen, not only contributed by his writings to promote inoculation, but also set the example, by permitting his only daughter to be inoculated. Nor was the patronage of inoculation less respectable at Basle, where, in 1756, it was adopted in the family of Bernouilli.

Inoculation commenced in ITALY during the great mortality occasioned by the Small-pox in 1754, throughout the Dukedom of Tuscany, and the ecclesiastical state; but more especially at Rome, where this disease carried off 4000 persons. Dr. Peverini was the first inoculator; and in consequence of his successful practice, farther trials were made in 1755, by Drs. Evangelisti and Monterchi. It appears, however, that before this time, in the interior parts of the country, inoculation had been adopted by the women; who seeing the dreadful ravages made by the natural Small-pox, assumed

assumed the resolution to save their children, by the artificial method of communicating the disease; and among the first of these female inoculators was the Marchese Buffalini. In the year 1755, M. De la Condamine visited Rome, and both by his writings and personal influence, reconciled many to the practice of inoculation, which soon after likewise found able protectors all over Italy, especially Gandini at Genoa; Pauli, Professor of Medicine, at Lucca; Manetti at Florence; and Lunadei at Urbino. Before the year 1765, inoculation was practised with success at Venice, Padua, Verona, Brescia, Mantua, Bologna, Milan, Parma, &c. In short, Naples was the only place of consequence remaining in which it had not been introduced.

I have already observed, that inoculation commenced at Hanover almost as soon as in England; but a long time elapsed before it
came

came to be generally adopted throughout GERMANY; and the Prussian and Austrian dominions were the last to receive it. This was chiefly owing to the influence and writings of Professor De Haen, who opposed inoculation with more effect than any other of its numerous and violent antagonists. The Professor, in his "*Quæstiones super methodo inoculandi variolas,*" published at Vienna in 1757, discusses the following questions, all of which he determines in the negative.

1st.—Is inoculation permitted by the laws of God?

2d.—Do more persons recover from the inoculated than from the natural Small-pox?

3d.—Is it certain, that almost the whole of mankind is liable to the Small-pox?

4th.—Are those, who have undergone inoculation, secure from the natural Small-pox during the remainder of their lives?

This

This publication was very fully answered, in 1759, by Condamine and Tiffot, to whom De Haen immediately rejoined in a pamphlet, entitled, “ *Refutation de l’inoculation, servant de reponse à deux pieces qui ont paru cette année,*” &c. In this tract the author has investigated the subject with much ingenuity and industry; and I must do him the justice to observe, that he has collected every thing that could possibly be said against the practice of inoculation. However, many of his alleged facts seem to be of a suspicious kind. Out of 220 of his patients, labouring under an epidemical Small-pox, he asserts that he lost only one. The numerous instances of persons repeatedly infected with the Small-pox, which he relates, though advanced on the testimony of others, will not obtain much credit at the present day. Cases of persons a second time infected with the Small-pox have
been

been so seldom produced, and have appeared so suspicious, that the reality of them has been justly questioned. But De Haen endeavours to shew, that the Small-pox not only obtrudes itself upon the same person twice, but even a third, fourth, fifth, sixth, and seventh time; nay, that one person, having braved this distemper seven different times, was carried off by it on its eighth attack.*

Thus, by arguments founded on this and various other supposed facts equally improbable, was the introduction of inoculation over a great part of Germany long prevented; for

* See p. 7. Cited from *Fernel. de abd. rer. caus. l. 2. cap. 12.* The following citation, at p. 12. taken from Decker, (*exercit. pract.*) is still more remarkable:—"Une femme avoit eu dans son bas-âge la petite vérole, & en étoit si horriblement marquée, qu'on l'appelloit communément *le Remède contre l'Amour.* Parvenue à l'âge de cinquante ans, elle en fut de nouveau attaquée pendant une Epidemie, & tellement changée à son avantage, que toutes les Dames qui en sont défigurées voudroient, je pense, l'avoir à ce prix une seconde fois."

it was not till two years after Tralles returned to the controverfy againſt De Haen, in 1765,* that inoculation began to make any progrefs at Vienna. In 1768 a conſiderable number of perſons were inoculated,† including the younger branches of the Imperial family, who were committed to the care of the ingenious Dr. Ingenhoufz; and ſome time afterwards an inoculation hoſpital was eſtabliſhed by the Emperor, in the ſuburbs of Vienna, where the patients were conſtantly entertained by a band of muſick kept for the purpoſe.

* *Vide Vexatiſſimum noſtra ætate de inſitione variolarum, vel admittenda, vel repudianda, argumentum, occasione quæſtionum ab illuſt. viro Antonio de Haen, &c. a Balthaſaro Ludovico Tralles.*

Tralles's firſt reply to De Haen was published in 1761, and the latter answered it in 1764, upon which Tralles rejoined in 1764.

† See *Locher's Obſ. circa Inoculationem variolarum.*—Alſo, *Vollſtändige Geſchichte der Einimpfung der Blattern in Wien, Herausgegeben von Anton. Rechberger. 1788.*

In BERLIN the introduction of inoculation was attended with such a succession of disasters, that the practice was suspended for a considerable time. The celebrated anatomist, Professor Meckel, who set the first example of inoculation upon his own children, did not extend the practice of it much farther before his success was interrupted, by the death of three of his inoculated patients, two of whom were the children of his Excellency the Baron de Horst. Dr. Muzell, Privy Counsellor to his Prussian Majesty, was still more unsuccessful: for of six children inoculated by him in one family, he had the misfortune to lose three; and it was with great difficulty that he saved the other three, who were much disfigured through the violence of the disease. After this untoward event, the Doctor not only declined the practice of inoculation himself, but used his utmost endeavours to prevent others from adopting it.

Under

Under these embarrassments inoculation fell wholly into disrepute, and was not again practised till about ten years afterwards, when Dr. Baylies was invited from Dresden, in 1774, to inoculate seventeen persons, all of whom had the Small-pox very favourably. However, a few weeks after their recovery, two of them were taken ill, and one (Master Blumenthal) died: as he had a peculiar eruption over the skin at the time, his death was generally ascribed, at Berlin, to a second attack of the Small-pox. In order to silence this report, Dr. B. stated the case to Dr. Archer, Baron Dimfdale, and Sir William Watson, who were unanimous in believing, that Master Blumenthal's disorder was a putrid fever, of which the eruption was only symptomatic.* The following year (1775), inoculation was so

* See *Facts & Observations relative to Inoculation in Berlin*, by William Baylies, M. D.

much encouraged by the King, that he ordered a physician from each of his provinces to come to Berlin, to be instructed in the practice of inoculation by Dr. Baylies. But so strong was the prejudice against the practice at that time in Berlin, that no person could be found who would submit to it; wherefore his Majesty, on this occasion, was obliged to have recourse to the children at the orphan houses.

IN WESTPHALIA, the two SAXONIES, and indeed in most of the inferior States of the Empire, inoculation was introduced about the year 1759 and 1760.

IN RUSSIA, where the natural Small-pox is so malignant that it is said to have destroyed annually two millions* of the subjects of that vast empire, inoculation, tho' practised before by Dr. Schulenius upon some of the inhabi-

* This number is mentioned on the authority of Baron Dimisdale, who has lately admitted that it may be too large.— See his *Tracts*, p. 119.

tants of Livonia, was wholly unknown at St. Petersburg till the year 1768, when it was established there under the judicious direction of Baron Dimsdale. The reigning Empress, however her political character may be censured, has ever manifested the utmost desire to meliorate the condition of the poor, and to diffuse every beneficial art and science throughout her dominions: among the rest, she was anxious to avail herself of the advantages of inoculation, and therefore, through her Ambassador to the British Court, solicited the assistance of some eminent practitioner from this country.

As several material improvements in the process of inoculation, chiefly on the Suttonian plan, had been made by Dr. Dimsdale, in 1766, and communicated to the public, he was in consequence recommended as the most proper person to introduce the prac-

tice into Peterfburg. Accordingly, at the earneft request of the Emprefs, the Doctor, attended by his fon, fet off for the Ruffian metropolis on the 28th of July, 1768, and in October following had the honour to inoculate the Emprefs and the Grand Duke, both of whom fpeedily recovered. This illuftrious example was foon followed by many of the principal nobility, both at St. Peterfburg and Mofcow; and the Doctor, after eftablifhing an inoculation hofpital, returned to Hertford, loaded with wealth and honours worthy imperial munificence.

Inoculation was not an eftablifhed practice in SPAIN till the year 1771.* It appears, however, to have been introduced forty-two years before at Jadrique, a fmall town in that kingdom, by a furgeon refiding there; but

* See O. Scanlan. *Práctica moderna de la inoculation*, p. 110.

though

though the practice continued to subsist during and after his time in the vicinity of Jadrique, it was nevertheless unknown in the other parts of the Spanish dominions till about the year 1770; when the Spanish Ambassador at the British Court, observing the success of inoculation in England, wished to introduce it into Madrid; and having caused inquiries to be made respecting this practice in Spain, was greatly surprised to find it had prevailed so many years at Jadrique, and communicated the discovery to Sir John Pringle, and by him to the Royal Society. The first persons of consequence, for whom inoculation was employed, were the two sons of his Excellency Count O'Reilly. Dr. Don Miguel Gorman, visited London for the purpose of learning the Suttonian method of inoculation; and in 1772 he returned to Madrid, where he practised that art upon several of the nobility, to the

great satisfaction of the court, who now wondered that they should have been so long ignorant of this admirable and useful invention. From this time the practice of inoculation gradually spread over Spain; and we are informed, by the Madrid Gazette, that within six months, partly in the year 1773 and partly in 1774, five hundred and fifty persons were inoculated with success at Vigo, Ferrol, and Corunna.

SECTION VI.

SECTION VI.

*Of the Progress and Practice of Inoculation in
Britain from the Year 1753 till 1768.*

IN resuming the account of the progress of Inoculation in England, I am to commence with that period in which the art had been practised more than thirty years, and was begun to be diffused among all ranks of people; the opposition to it having gradually become less considerable, and less availing. As the experience of the inoculators kept pace with their increased practice, we shall find, during the twelve years which the present section comprehends, that they were enabled

to make several very important improvements.

Early in the year 1754, two tracts, on the subject of inoculation, were published in London, one by Mr. James Burges, an apothecary; the other by Dr. Kirkpatrick. The work of the former is entitled, “*An account of the preparation and management necessary to inoculation.*”

I am here induced to give a circumstantial statement of the contents of this work, because the practice which Mr. Burges recommends seems to be nearly the same as that generally adopted by contemporary inoculators. This will appear not only from the dedication of the second edition of his pamphlet to Mr. Serjeant Surgeon Middleton, but also upon comparing Mr. B's “account of the preparation and management necessary to inoculation,” with a treatise of a similar import, written by
Surgeon

Surgeon Ranby for the instruction of the Genoese, there being no difference in the general plan. We may therefore presume, that the very extensive and successful practice of Mr. Ranby and Mr. Middleton, as likewise that of Mr. Hawkins, and other inoculators about the same period, was conducted according to the method laid down by Mr. Burgefs.

With respect to the objections made to inoculation, this author thinks it unnecessary to say much: he contends, that as variolous matter is a poison *sui generis*, it cannot, by inoculation, communicate any other distemper. In proof of this, he says, " I know of one instance where the matter was taken ignorantly by the surgeon from a young woman, who coming up to St. Thomas's Hospital to be salivated for the venereal distemper, fell ill of the Small-pox. Three patients were inoculated from this matter, and had the Small-pox
in

in the most favourable manner. Nothing particular happened about the wounds. They all grew up healthy; two of them are now alive; the third died of a violent fever at sea many years ago.*

A certain preparation of the body, previous to inoculation, Mr. Burgefs thinks absolutely necessary, prudently observing, however, that those who reduce their patients much, and those who consider all preparatory measures as useless, are equally culpable. He allows his patients to eat the lighter kinds of meat every other day at dinner: but at other

* Edition First, page 5th.—Dr. Kirkpatrick also says, “A worthy surgeon, of my acquaintance, of great truth and morality, assures me, of his own knowledge, that a young lady, of a creditable family, was inoculated by an apothecary from a gentleman’s servant, in a kindly Small-pox, who had at the same time a venereal bubo. The lady, notwithstanding, did very well, and never had the slightest symptom of venereal infection.”—*Analysis. ed. 1. p. 140.*

times they are restricted to a diet merely vegetable, for about three weeks. About the end of the second week, he exhibits a purgative, which is to be thrice repeated with an interval of three days between each dose, unless the patient be evidently weakened by the discharge. After this he inoculates in the following manner: " Let a slight incision, of about an inch long, be made on each arm through the cuticle into the skin, but not through it so as to wound the cellular membrane; let a thread, saturated with variolous matter, be laid along the whole length of the wound, and covered with a pledget of digestive ointment, fastening it on with an adhesive plaster, and binding it on with a thin linen roller; let this dressing continue on two days; on taking it off the third day, the wound will appear slightly inflamed; and in two or three days after the edges of the wound will look whitish,

whitish, the certain sign the inoculation has taken place. From the time of performing the operation to the seventh day, the patient discovers no alteration; but about that time, or soon after, begins to be sensible of chilliness, with slight shiverings, pains in the back and limbs, weight and pain in the head, with sickness, and a disposition to vomit: young children grow drowsy and heavy, the mouth, especially about the lips, is seized with frequent convulsive motions, which sometimes spread through the whole habit, and produce those universal convulsions called fits. On being kept in bed some time, and supplied with warm liquids, these symptoms abate, and the whole body gradually becomes disposed to sweats, which on the second day from the first attack of the distemper, often throws out an eruption resembling flea-bites, which are sometimes so thick as to put on the appearance of a
scarlet-

scarlet-fever; but if the patient is kept quiet, and supplied with soft liquids, moderately warm, a profuse sweat succeeding carries off the eruption; and about the fourth day, all the other symptoms decreasing, the Small-pox appear in small red spots, which, by the beginning of the fifth, rise apparently above the skin. By this time the head-ach, vomiting, sickness, and all convulsive motions ceasing, declare nature is discharged of her load, and the eruption complete."

After the operation his patients are confined to a stricter regimen; they abstain wholly from meat; and gentle laxatives are constantly employed. About the seventh day, or when the eruptive symptoms commence, he orders the patient to keep in bed, in order to encourage perspiration, and to carry off the infectious matter; but he adds, "the most useful and necessary precaution is to keep the body
open,

open, as the falts of the bile are the grofseft, and feem to have the greateft connection with the various fymptoms of the diftemper.”

If there be much pain in the head, oppreffion at the breaft, difficulty of breathing, or great heat of the fkin, he recommends bleeding; and if the convulfive fits in children continue, he both bleeds and blifters them, giving at the fame antifpafmodics, fuch as “valerian, foot-drops, and fome chemical preparations of amber.” Emetics in this ftage of the diftemper, he condemns as always hurtful, afferting that he “never faw the delirium continue after the eruption was complete, but in thofe cafes where vomiting had been previously ufed.” After all the puftules have appeared on the fkin, the febrile fymptoms ufually abate, fo much, that he finds little remaining to be done more than to take off the forenefs and irritation of the puftules by
opiates,

opiates, to cause the patients to drink freely of diluting liquors, and confine their diet to milk pottage, barley-water, &c.

Dr. Kirkpatrick's *Analysis of Inoculation*, which was published at the same time with the preceding pamphlet, by containing the history, theory, and practice of the art, forms a volume of considerable size, and is the most comprehensive digest given of the subject. The author first began to practice inoculation in America, and published an essay on the success of it in South Carolina, during the year 1738;* which was probably the principal cause of establishing him as an inoculator in London, where he had resided about twelve years, before he wrote the "Analysis." §

That

* Of this essay an account has been given at p. 219. & 220.

§ Dr. Kirkpatrick was also the author of *A Letter to the real and genuine Pierce Dod, M.D. actual physician of St. Bartholomew's Hospital, &c; with a full answer to the mistaken case of a natural Small-pox, after taking it by infection, by Dod Pierce.*

That Dr. Kirkpatrick, in 1756, was esteemed the most scientific inoculator in London, may be presumed from his having been, during that year invited to inoculate some of the principal of the French nobility. In his writings, however, we find little evidence of his great experience: his practical observations are seldom new, and are for the most part un-instructive; his reasoning is puerile and confused; and indeed the whole of his book is so obscured by a tedious verbosity, and an affectation of learning, that the reader must often be at a loss to understand it.* In 1761, he published a second edition, into which various additional facts and remarks were in-

This was published in 1746, in reply to "*Several Cases in Physick*," by Dr. Dod, whose professional character, it has been said, suffered very considerably by this satyrical attack.

* In the second edition, Dr. K. acknowledges, that he had heard of some wags, who threatened to translate his book into English.

roduced :

roduced: I shall therefore defer the consideration of Dr. Kirkpatrick's practice till the time when it was last stated to the public.

M. De la Condamine's first Memoir upon inoculation, was translated into English, and published in 1755, by Dr. Maty, who has not only added several interesting notes, but has also inserted some observations in the context, which are not to be found in the original. These additions, we are informed, were sent to the translator by the author, who was desirous that a nation, for which he every where professes the highest regard, and whose medical writers had afforded the basis of his work, should, before all others, receive it in its most perfect state.—The first part of this pamphlet, which is historical, exhibits a short but connected and clear account of all then known in Europe, concerning the progress and result of inoculation. However, as this

account is principally drawn from the practice of the English, who were already well acquainted with the facts, it must consequently have been less interesting to them than the other part of the publication, which contains a reply to all the objections then urged against inoculation. These objections, including both those of a religious and medical kind, amount to six, all which M. De la Condamine has answered with such convincing and forcible arguments, that the subsequent defenders of inoculation have had little more to do than to enforce what is said by him on the subject. Nor did this French Pericles (as Dr. Maty aptly styles him) neglect to employ declamation as well as argument: with what effect, the reader will be enabled to judge from the following specimen, in which the British nation has the honour to be held out as an example to France:—“ The fable of the
Minotaur,

Minotaur, and of that shameful tribute, from which the Athenians were delivered by Theseus, seems at this day to be realized in England. A fell monster had for twelve centuries together fed upon human blood. Of a thousand persons, who had escaped the first dangers of childhood, that is, of the choicest part of mankind, he frequently selected 200 victims.—Hereafter he will only seize on those who unluckily fall in his way, or come within his reach, without sufficient caution. A wise and learned nation, our neighbours and our rivals, have not disdained the instructions of an ignorant people how to subdue and tame this monster: they have learned the art of transforming him into a domestic animal, and to make him serviceable to the saving of those very lives, which would have fallen a prey to his voracious jaws.

“ While among us the Small-pox continues

its devastations, we still remain idle spectators; as if France, because she has fewer resources to increase her numbers, stood in less need of inhabitants than England. If we have not had the honour of setting the example, let us at least have the resolution to follow it.

“It has been proved that the fourteenth part of mankind annually dies of the Small-pox. Therefore, of 20,000 persons that die yearly in Paris, this dreadful distemper carries off 1440.”—And “*had inoculation prevailed in France in 1723, near a million of lives had by this time been saved to the state, exclusive of their posterity.*”

In 1756 was published, “*A letter from a physician in town to a friend in the country, on the subject of inoculation: in which the reasons for the practice are considered and enforced, and its consistency with our duty to God and to society asserted and defended.*”

This

This pamphlet, as appears by a subsequent edition of it in 1757, was written by Dr. Daniel Cox, who has done little more than repeat the arguments in favour of inoculation, given by the Bishop of Worcester and M. De la Condamine. Therefore, though he has stated his reasons for adopting inoculation in a clear and comprehensive manner, so as probably to have biased the public opinion at that time, yet this must have been done rather by disseminating more widely what was already known, than by advancing new arguments upon the subject.

The same remark is applicable to another anonymous pamphlet, published at this period, viz. "*The grand objection to inoculation considered;*" of which no other notice seems necessary to be taken than thus merely to announce its name.

Dr. David Schultz, who was sent to London by the King of Sweden for the purpose of learning inoculation, and who attended the Inoculation Hospital as pupil to Dr. Archer about twelve months, published, "*An account of Inoculation,*" which in 1758 appeared in English; and as containing much useful information, it met with a very favourable reception in this country. For though this author has introduced into his pamphlet very few original observations, yet, by giving a methodical and faithful relation of all the interesting facts concerning inoculation, his work was rendered a valuable compilation, and peculiarly adapted for the Swedish nation, by whom the subject was then very imperfectly known.

I may also add, that his subsequent success in introducing and carrying on inoculation among his countrymen, was equally honourable to himself, as it was to those by whose judgment

judgment and discrimination he was selected for that purpose. Among the practical observations to be considered as new, are those which this author made at the Inoculation Hospital, in conjunction with Dr. Archer, whose practice is alluded to in the following remarks:—“ We have observed, that people of hot constitutions, who have dark hair and eyes, a thick hard and brown skin, generally are very full of pustules, and sometimes have a dangerous sort.—Those who are full of blood,* of a mild kind, whose skin is white and soft, generally have a kind eruption.—Those who have thin and watery blood have seldom many pustules, but they are not always free from indurations of the glands, and are subject to febres lentæ nervosæ, especially females.—

* He had frequently an opportunity of examining the state of the blood, as it was then the practice at the Hospital to bleed most of the patients before they were inoculated.

People of a heavy aspect, provided with thick blood, whose skin is of a dirty hue, have very often a bad sort in the natural way.— A mixture of these different constitutions of body makes very often the subject more fit for inoculation.”

With respect to the mode of inoculation, and the treatment of the patients either as preparatory or subsequent to the operation, the author does not seem to have advanced any thing new.

A serious address to the public concerning the most probable means of avoiding the dangers of inoculation, was published in 1758. The anonymous writer of this tract thinks that the practice of inoculation should be wholly confined to the physicians: asserting, that the unsuccessful cases which occur in this process are to be imputed to the ignorance of the surgeons, who inoculate persons indiscriminately,

nately, without employing the necessary precautions, and whose want of knowledge of the nature of diseases and of internal medicines may be of fatal consequence to the patient.—“ No one (says he) ever thought the surgeon qualified, or to be depended upon in the natural Small-pox, although he often in this case is called in to bleed, which is more difficult and important than the operation we mean; and he may then, with the same justice, presume to conduct the patient through the natural way, as to pretend to do it when he is called in to inoculate.”

This “ Serious Address,” which also contains several reasons for not inoculating children under two years of age, was answered by Mr. Cooper, a surgeon,* who, with great

* “ Remarks on a Serious Address to the public concerning the most probable means of avoiding the dangers of inoculation. To which are added, a few short and useful directions for the conduct of inoculation, by *Thomas Cooper, Surgeon.*” 1758.

candour and impartiality, examines the question more fully than an anonymous pamphlet might seem to demand. He says, "Most tumours and abscesses, unless the critical terminations of acute diseases, are produced gradually, and are attended in their formation with a symptomatic fever, which is as equal an effort of nature to throw off the morbid matter, as that fever antecedent to the eruption of the Small-pox." And, "after the performance of any operation of consequence a fever naturally arises, which perhaps may not be improperly compared to the secondary fever, which is so often fatal in the natural Small-pox." Now, as the medical treatment in these cases is usually under the direction of the surgeon, Mr. C. concludes, from analogy, that he should be equally capable of prescribing in the various stages of Small-pox. Besides previously to all capital operations, some preparatory

paratory plan, suitable to the constitution of the patient, is enjoined by the surgeon, who must, in like manner, be enabled to direct the necessary measures antecedent to inoculation. Respecting the inoculation of infants, he admits that it is a very improper practice, and observes that most inoculators are of this opinion. In his "Short directions for the conduct of inoculation," I find nothing deserving of particular notice.

In 1759, Dr. Franklin published, *Some account of the success of Inoculation for the Small-pox in England and America. Together with plain instructions, by which any person may be enabled to perform the operation, and conduct the patient through the distemper.*

By this account it appears, that about the year 1753, the Small-pox made its appearance at Boston, New England, when the number infected by it was as follows:

<i>Had the Small-pox in the common way</i>		<i>Of these died</i>	
Whites	Blacks	Whites	Blacks
5059	452	454	62
<i>Received the Distemper by Inoculation</i>		<i>Of these died</i>	
Whites	Blacks	Whites	Blacks
1974	139	23	7

In this statement, which was first communicated to Dr. Heberden, the author observes, that “ notwithstanding the now uncontroverted success of inoculation, it does not seem to make that progress among the common people in America which at first was expected. *Scruples of conscience* weigh with many, concerning the lawfulness of the practice. And if one parent or near relation is against it, the other

other does not choose to inoculate a child without free consent of all parties, lest, in case of a disastrous event, perpetual blame should follow. These scruples a sensible clergy may in time remove.—The *expence* of having the operation performed by a surgeon, weighs with others, for that has been pretty high in some parts of America; and where a common tradesman or artificer has a number in his family to have the distemper, it amounts to more money than he can well spare. Many of these, rather than own the *true motive* for declining inoculation, join with the scrupulous in the cry *against it*, and influence others.” He therefore supposes, that the publication of a small pamphlet, written in plain language by some skilful physician, directing what preparations and precautions should be used, with the method of performing inoculation, might render this practice more general, and
thereby

thereby save the lives of thousands. In consequence of this hint, Dr. Heberden, much to his honour, undertook to write "*Plain instructions for inoculation,*" and generously, at his own expence, printed a very large impression of them, which were put into the hands of Dr. Franklin, to be distributed gratis in America. Dr. Heberden undertook the above publication from a conviction, that "this practice has so greatly the advantage over every other way of communicating the Small-pox, that it would be the better to have inoculation performed by any body, or in any manner, than to suffer this disease to come on in the common way, though assisted with all the helps which art can afford."—His Plain Instructions for inoculation are drawn up with great judgment, as will appear from the following extract, in which a valuable improvement, in the art of inoculation, is first pointed

pointed out:—"After twenty-four hours, the plaster and thread may be taken away; and from this time the incision need not be covered with any plaster, or roller, till it begins to inflame or grow sore, when, for the ease of the patient, it must be defended from the air, and from the rubbing of the cloaths by a bit of common plaster. The inconvenience attending its being covered with any plaster or poultice, after the first twenty-four hours, is this, that these applications, continued for four or five days, will occasion a redness on the skins of many people, and in some will cause a considerable degree of erysipelatous eruption. At the time, therefore, when some appearance of the infection may be expected about the incision, it will be a little doubtful, where a plaster has been applied, whether the discolouring and inflammation be owing to the expected distemper, or merely to the plaster.

This will keep the patient and his attendants in an unnecessary suspense; and, if there should happen to be no eruption, their uncertainty would be much more perplexing, and might never be cleared up. Whereas, if such an inflammation came on four or five days after the incision, when no application had been used to the part, there could be no doubt of its arising from the infected thread; and it seems to be the general opinion in England, that a regular inflammation and suppuration of the little wound, proceeding from the infection of the variolous matter, will, without any eruption, fully secure the patient from having the Small-pox afterwards."

Returning to the *Analysis of Inoculation*, by Dr. Kirkpatrick, I now enter upon an examination of the second edition of this work, published in 1761, in the prosecution of which I shall attend to such practical facts and circumstances

stances only as have escaped the observation of the other inoculators.—Dr. K. is the first author who has given an account of what he terms *inoculation by vesication or blister*. He observes, that those who have felt insuperable terror at the sight of a lancet, and would not submit to be inoculated by incision, “ have had a slight vesication or two raised by a little cantharides or epispastic applied within the slit of a closely adhesive plaster, and the pus was applied after cutting and removing the cuticle and slough.”—He adds, “ This method of infecting by vesication or blister was the only one made use of at Paris in 1756 by the learned Dr. Tronchin ; who thus successfully infected the Duke Chartres and Madam Monpensier, and several others. For the satisfaction of the Dukes Rochefoucault and D’Estillac, I attended and infected five poor children, three about seven years old, by
incision,

incision, and two about five years old, by vesication. The girl, by incision, had a pretty moderate but very kindly sprinkling; the two boys very few: the two by blisters, a boy and a girl, rather less; *Dudis*, a very fair delicate little boy, not having above three or four, all which had not matter enough to infect one patient. Neither indeed was there any thing to be called suppuration from the vesicated spots of either of them, but a redness attended with considerable soreness and sensible exudation of moisture. It was performed after the vesicated cuticle had been removed, by applying the infected thread, rolled up in a small flat circle or coil, to the denuded cutis or skin, and keeping it on by a mild and moderately adhesive plaster, or a compress and broad fillet. This little coil contained a thread at least four or five times as long as what is ordinarily used to infect an adult by a single incision;

for

for I have known children often infected by one of about a quarter of an inch : and doubtless an infected pledget would have been a more convenient application here, but our matter had been already collected in threads.”

It seems that a dispute arose among the faculty at Paris, whether this new mode of inoculation was preferable to the common method by incision ; and upon inquiry it appeared, that by the former method, fewer pustules were usually produced : yet that inflammation of the eyes and phlegmonous tumours more commonly followed than when the latter mode of infection was adopted. Hence Dr. K. concludes, that the ordinary way of inoculation produces “ a more complete despumation of the variolous matter from the blood.”

To prove the great length of time during which variolous matter retains its infectious quality, Dr. K. relates, that a thread, saturated

with it, and preserved in a close vial for six years, was still found to answer the purpose of inoculation. This fact, however, will not be deemed very remarkable by those who believe in the account sent to the Rev. M. Chais; * wherein it is stated, that a physician, in Bengal, effectually inoculated with matter which had been collected by his great-grandfather.

The time of life when persons may undergo inoculation with the most advantage, is, according to Dr. K. between four and seven years of age. The next most favourable period he deems to be from seven to the time of puberty. Infants, or children under two years old, he ranks among the subjects less proper for inoculation, saying, “from thirty-four inoculated here, within the term of

* See his *Essai Apologétique*, &c. p. 122.

eight years, from the age of one to two, four died."

Respecting the propriety or impropriety of inoculating persons of an unhealthy constitution, he received the following remarks from Dr. Heberden: "It seems a reasonable practice to take some care, at the time of his receiving the infection of the Small-pocks, that the person should be as free as may be from any other distemper; lest nature should be hindered in producing, maturing, or rightly discharging them; or lest he should sink under the oppression of two distempers at the same time. But it may happen, that the persons to be inoculated may have brought into the world with them some hereditary taint, which can never be subdued; or they may be so circumstanced, that there may not be time enough for entirely freeing them from some other distemper, before the convenient time for their

inoculation. Such persons must receive great satisfaction from knowing, that it is a less formidable thing, than it is often imagined, to have the Small-pocks superinduced upon another disease; or to have them appear upon one in a very ill habit of body.

“ A youth, long afflicted with the evil, after having suffered all its cruelest ravages, began to be dropfical, as is usual in the last stage of the disease; and in this condition, in which no one could have expected him to live a month, he caught the Small-pocks. It proved a most favourable sort, the eruption of which, the maturation and the going off, were all perfectly regular and kindly, and did not seem either to be affected with the other disorders, or at all to affect them. He died a little time after the Small-pocks were entirely over, and seemingly not an hour sooner for his having had them.

“ The

“ The venom of the Small-pocks is of a peculiar kind, and it is doubtful how far it is capable of being joined or heightened by that of any other distemper. Sometimes it is observed, that the disease upon which the Small-pocks have happened to be superinduced, remains in a state of quiescence all the time of the Small-pocks. This was often seen during a certain epidemical intermittent, which in many persons ceased as soon as the sickness of the Small-pocks began, and constantly made its appearance again after the patients had been properly purged at the end of the Small-pocks; nor was it found that either of these diseases was at all affected by the other, excepting only the disappearance of the intermittent during the continuance of the Small-pocks.”*

* Analysis, ed. 2. p. 271.

These observations, which have since been confirmed by enlarged experience, are well worthy of the venerable character of the man with whom they originated.

Concerning the preparation previous to inoculation, Dr. K's. method differs not materially from that recommended by Mr. Burgefs. From the time of inserting the variolous matter till the completion of the eruptive symptoms, he thinks nothing can be rationally undertaken, unless it be to obviate any considerable degree of costiveness. He adds:—"The late accounts we have had from Philadelphia,* of the inoculated taking three doses of calomel and diaphoretic antimony, followed with three of cornachini, besides powders, &c. from the night before inoculation unto the usual time of sickening, seem more dangerous. They

* The Dr. alludes to the Pennsylvania Gazette, published June 26th, 1760.

tell us, however, that all but one, out of 700, recovered; which I should be both glad and surprized to find verified past all doubt. As the hint must have been taken from Boerhaave's notion of a variolous antidote, such a success must do great honour to his memory, and effectually cure Dr. Haen's aversion to a modicum of mercury in preparing for this disease. But until we have more authentic vouchers in this important matter, than a remote and common newspaper, I shall not hesitate to declare my opinion,—That there is something absurd and preposterous in this attempt of *ungiving*, as it were, a disease we have just imparted: when the indemnity from a second visitation of it is expected by all rational physicians, only from the regular process of the disease, through the mild, but natural, operation of the cause, which they have communicated with their best precaution; this very word

implying

implying something previous, not subsequent to an attempt or action. Indeed this officiousness, which may naturally arise from the inoculator's great anxiety about the consequence, seems to make too high a compliment to their own over-rated abilities, and to pay too slight a regard to the exquisite, the awful mechanism and motions of the vital machine; which Hippocrates, with a very imperfect, if any, notion of the circulation, termed nature, and pronounced to be the curer of diseases. And it is seriously to be apprehended, that those who assume so arbitrarily to controul these divinely formed and regulated movements, are often the very persons who are the most likely to perplex their directions, and to defeat their salutary purposes and operations. Had inoculation, with its justest precautions, succeeded less than usual at Philadelphia, which the paper does not suggest, it might have been
some

some motive for this innovation, that carries strong marks of crudity, in being directed indiscriminately for the good, bad, and indifferent subjects of the Small-pocks, without regard to different complexions or temperaments, or making any other distinction, but that of the different doses for children and adults. Nevertheless, having thus averred my own objections to it, I give this stimulating, evacuating, confusing, and unremitting course of physic at the bottom of the page,* with this infallible prognostic—That if it does not make the patient worse, it will seldom disagree with his apothecary.”

This

* It is stated as follows:—“The night before you inoculate, give a few grains of calomel, well levigated, with a like quantity of diaphoretic antimony, unwashed, proportioning the quantity of calomel to the constitution of your patient; from four grains to ten for a grown person, and from one to three for a child, to be made up into a bolus or small pill, with a little conserve of roses, or any common syrup. The next morning
give

This extract, to which much more might be added, sufficiently shows how this learned inoculator treated a very important improvement in the art of inoculation, not only rejecting, but abusing a successful mode of practice,

give a purge of the pulvis cornachini, made with equal parts of diaphoretic antimony, scammony, and cream of tartar. Repeat the bolus or pill three times, that is, once every other night after inoculation, and on the fifth day give a dose of Boerhaave's Golden Sulphur of Antimony: about four grains of it for a grown person, with two or three grains of calomel, made into a small pill, will operate both as a vomit and purge at the same time.

“ In the intermediate days, give two or three papers of the following powders, viz. diaphoretic antimony, ten grains; sal prunel, six grains; and calomel, one grain, mixed together, for a grown person; and about one fourth part of a paper for a child. These powders are to be continued until the variolous or Small-pock's fever is over; and while the fever is high, let your patient drink a cup of whey two or three times a day; the whey to be made of cream of tartar instead of runnet, and those that are of a full habit, should be blooded once or twice within the first eight days, and must abstain from all spirituous liquor, and from meat of all kinds, broth, salt, and butter.”

Pennsylvania Gazette, June 26, 1760.

merely

merely because he could not reconcile it with his own theory, and to the plan of proceeding which he had been accustomed to follow. But though Dr. K. did not profit by the useful hint which the new practice at Philadelphia held forth, we shall find that it was not long before others reaped the advantage of it in this country.

Inoculation was so unsuccessful at Philadelphia, that Dr. Adam Thompson, in 1750,* declared that many were disposed to abandon the practice; wherefore, upon the suggestion of the 1392 aphorism of Boerhaave, he was led to prepare his patients by a composition of antimony and mercury; which he constantly employed for twelve years with uninterrupted

* See *A Discourse on the preparation of the body for the Small-pox, and the manner of receiving the infection, as it was delivered in the public hall of the Academy, before the Trustees and others, in November, 1750.*

success. Dr. K. therefore ought to have known, that the use of mercury and antimony, which he condemns in such cases, was no wanton innovation.

With respect to the treatment of inoculated patients, after the eruptive symptoms had supervened, Dr. K. says very little. If these were violent, and attended with much fever and delirium, he had recourse to bleeding; and in cases of convulsion and languor, he applied blisters, and administered cordials. He found the seventh and eighth days after inoculation the common time of sickening; if it happened much sooner, he dreaded a more severe disease than when it was procrastinated till some days beyond this period. Another remark, which he makes in common with Mr. Ranby and Mr. Burgess, is, that during the eruptive complaints, the urine is of a lemon colour, and deposits a farinaceous sediment.

In

In June, 1764, the late Dr. Alexander Monro, Professor of Anatomy in the University of Edinburgh, gave an "Account of the inoculation of the Small-pox in Scotland," in a letter to the Dean and Delegates of the Faculty of Medicine at Paris, appointed to inquire into the advantages or disadvantages arising from the inoculation of the Small-pox. In this account, which was soon afterwards published, we find that the learned professor was solicited to answer the following queries:

1.—*Has inoculation been long practised in your country, and with what success?*

2.—*Did some of the inoculated die?*

3.—*Did some, who had undergone inoculation, take the natural Small-pox afterwards, and at what time?*

4.—*Do you know that other diseases have been ingrafted with the Small-pox by inoculation?*

5.—*Whether did many, after inoculation, labour under various diseases which seemed to be owing to this operation?—And whether did this happen more frequently or seldomer than from the natural Small-pox?*

These questions were communicated to the medical practitioners residing in the different counties of Scotland, by whose assistance the professor was furnished with numerous facts and observations, which he has stated with great judgment and impartiality, and which must have impressed the Faculty of Paris with very favourable sentiments of inoculation.

It appears from Dr. Monro's tract, that the deaths by the Small-pox, recorded at Edinburgh in the bills of mortality, have been diminished since the more general adoption of inoculation there. Thus, from the year 1743 to 1754, they are stated at 1258, and from the year 1753 to 1764, at 1185. The number of inoculated,

inoculated, in North Britain, according to the different accounts received by Dr. Monro, amounted to 5554, out of which 72 died: *i. e.* one out of 78.

There are several remarks of much importance in the practice of inoculation interspersed throughout this publication, and the treatment of patients by the cool regimen, may have been partly suggested by the following fact. "I have good information of 112 being inoculated in the middle of winter in some of our most northern isles, where there was scarce fuel enough to prepare victuals, and many of the inoculated went abroad barefooted in snow and ice; yet not one of the whole number died."

The next publication which I shall notice, is that of Dr. Andrew, of Exeter, in 1765, entitled, "*The practice of Inoculation impartially considered; its signal advantages fully*

proved; and the popular objections against it confuted; in a letter to Sir Edward Wilmot, Bart.” In the practical part of this pamphlet the author strenuously contends for the use of mercurial purgatives and antimonials, as a necessary preparation for inoculation. He admits, with many other physicians, that young children may not always require medicine previously to inoculation; and says, that Dr. Swan, of Newcastle, successfully inoculated seventy or eighty persons without any preparation: yet as the unsuccessful cases under inoculation were commonly ascribed to worms which may exist in the primæ viæ without being detected, he thinks “it not improper to give a mercurial purge or two, even to young persons, who in all appearance are quite healthy.”— On this subject he cites the following letter from Dr. Huxham, dated Plymouth, January, 1765:—“So long ago as 1724, I suggested
that

that mercurials, as well-prepared calomel, or the like, might be of use in the Small-pox. I seldom fail of giving a mercurial purge or two, previously to inoculation of a person for the Small-pox. Sometimes also I give my antimoniated æthiops, especially when I suspect a verminous feminium, foul obstructed viscera, or glands. The use of mercurials and antimonials will more fully appear, as preparatory to inoculation, by what the ingenious Dr. Benjamin Gale, of Connecticut, in New England, has communicated to me in his *‘Dissertation on the Inoculation of the Small-pox in America;’* in which he says, *‘Before the use of mercury and antimony, in preparing persons for inoculation, one of 100 of the inoculated died, but since only one of 800.’*—According to Dr. Gale, the use of mercury in the Small-pox was first resorted to in the *English American Colonies* in 1745, when it was employed with

success by Dr. Thomas, of Virginia, and Dr. Murison, of Long Island, in the Province of New York.—“ In the year 1752, there was an exact account taken by order of the magistrates of the town of Boston, and rendered upon oath, of all who had the Small-pox, either in the natural way, or by inoculation, and the precise number of those who had died of it in either; by which it appears the number of the inhabitants amounted to 15,734. Those who had the distemper in the natural way amounted to 5544, of which 514 died.—The whole number inoculated amounted to 2113, of which 30 died.” This agrees with the statement before given by Dr. Franklin. Hitherto mercury had not been made use of in inoculation at Boston; but in 1764 the Small-pox visited Boston again, when Dr. Gale says, “ By the last accounts 3000 had recovered from inoculation in the new method
by

by the use of mercury, and five only had died, viz. children under five years of age." Dr. Andrew, who seems to have been influenced by the American practice, observes, "whenever the person to be inoculated is of a full sanguine habit, I always order blood to be drawn, and generally give three or four doses of purging physic, with a few grains of calomel, at proper intervals, and an alternate medicine, with some preparation of antimony, every night on the days that no purging physic is taken." During the preparation, he allowed his patients the lighter kinds of meat at dinner, every other day, with liberty to drink wine and water; but on the sixth day after inoculation, he says, "I forbid all flesh and wine till the eruption is completed, and do not permit my patients to go off the floor where they are, lest by any exercise they may heat their blood, and thereby increase the fever, which usually

begins about the end of the seventh or beginning of the eighth day after the operation, and sometimes with as much violence as in the natural Small-pox. From that time I confine my patients to their beds, till the eruption."——Dr. Andrew has at some length endeavoured to obviate the objections to inoculation, and more especially those advanced by De Haen; but on this subject I do not find that he furnishes any new arguments. Dr. Relhan * served the cause of inoculation more effectually by answering Dr. Raft, of Lyons, who urged a very plausible objection to that practice, founded upon calculations, shewing that by the bills of mortality in London, the

* See *A Refutation of the reflections against inoculation, published by Dr. Raft, of Lyons, so far as they are supported by calculations, drawn from the bills of mortality in London, and his observations. With a persuasive to that practice, deduced from the success of the Inoculation Hospital, near London,* by Anthony Relhan, M. D. Fellow of the College of Physicians, London, 1764.

number of deaths by the Small-pox had been gradually increasing since the introduction of inoculation into this metropolis.* This Dr. Relhan very satisfactorily proves to be independent of inoculation, and asserts, that no positive inferences can be drawn from those bills, even in their present form; while Dr. Raft's calculations commence at a period in which the bills were irregularly kept, and from which they have been transmitted to us in a very imperfect state. He also shews, that even admitting the London bills of mortality to be complete, the conclusions deduced from them by Dr. Raft, are inadmissible.

A new æra in the history of inoculation had now taken place, by the introduction of the Suttonian practice, which in the year 1765 had extended so rapidly in the counties of

* See *Reflexions sur l'inoculation de la petite vérole, et sur les moyens qu'on pourroit employer pour délivrer l'Europe de cette maladie.*

Essex and Kent as to much interest the public, who were not less surpris'd by the novel manner in which it was conducted, than by the uninterrupted success with which it was attended upon a prodigious number of persons.

Mr. Robert Sutton, the first of this name who acquired celebrity as an inoculator, resided at Debenham, in Suffolk, where he practis'd surgery and pharmacy. He began to inoculate in February, 1757, in which year the number of persons inoculated by him

was - - - - - 41

In the year 1758 he inoculated 27

1759 132

1760 135

1761 113

1762 452

1763 575

1764 243

1765 333

1766 224

1767 239

2514

Two of his sons, Robert and Daniel, designing to follow the profession of their father, were employed in the dispensing of medicines, and in assisting him during the three first years of his practice of inoculation: after which Robert, the elder brother, removed to Bury St. Edmund's, where he became an established inoculator; while Daniel acted as assistant to Mr. Bumstead, a surgeon and apothecary at Oxford.—The latter, on his return to Debenham, in the year 1763, suggested to his father (as I was informed by him) a new plan of inoculation, in which he proposed to shorten the time of preparation to a few days, and not to confine the inoculated patients to the house, but to oblige them to be in the open air as much as possible during the whole progress of the distemper.

To reduce the process preparatory to inoculation, from a month, which was then the
usual

usual time, to eight or ten days, was to obviate the objections that many persons had made to inoculation, from the great length of time it required. This, therefore, might be thought a measure of expediency, to bring a greater number of patients; but obliging those under inoculation to walk out in the cold air, during the eruptive fever, seems to have been a practice, the benefit of which he probably discovered from experience. However, Mr. Sutton, the father, could not be persuaded to adopt any innovation in the practice of inoculation, and would not hear the whole of his son's new scheme, which he condemned as not only rash and absurd, but as extremely dangerous. Daniel soon afterwards, however, availed himself of repeated opportunities of carrying it into effect, and found it to answer his utmost expectations. The advantages of this new plan were soon perceived by the patients, who

now began to manifest a desire of being solely under the direction of Mr. D. Sutton. This preference gave occasion to a dispute between the father and the son, about the end of the year 1763, when the latter determined to practice inoculation uncontrolled by parental authority; and for this purpose he opened a house in the neighbourhood of Ingatestone, in Essex. Here the young adventurous inoculator, by public advertisements and hand-bills, proposed to inoculate upon an improved method, peculiar to himself; and also hinted, that by the use of certain medicines, he could always render the Small-pox an innocent and tractable disease. Three months elapsed before he profited by his new situation; but he afterwards succeeded so well, that at the close of the first year his profession produced him 2000 guineas: and in the second year, which he says was the most profitable

of

of any that he experienced, his fees amounted to more than treble this sum. His fame was now spread to the most distant parts of the kingdom; and the numbers that resorted to him for inoculation, constantly filled the village of Ingatestone, so that it was with great difficulty lodgings could be procured for the purpose. His practice in Kent being also very extensive, he was under the necessity of employing several medical assistants.*

Great, however, as might be the number which he inoculated, and the success of his practice, yet they were both greatly exaggerated, not only by public report, but by the

* In 1767, Mr. D. Sutton removed to London, where he hoped to profit by his profession still more than he had done in the country; but his practice here fell far short of his expectations; and the two houses, one at Kensington Gore, and another at Brentford, which were procured for his inoculated patients, were soon abandoned.

venal pen of the Reverend Robert Houlton.* This gentleman, who styles himself 'Chaplain to the Earl of Ilchester, and Officiating Clergyman at Mr. Sutton's,' asserted, that not one person out of a thousand inoculated by Mr. Sutton, had more variolous pustules than he could wish, and that if any patient had twenty or thirty pustules, he was said to have the Small-pox very heavily. He says, "If Mr. Sutton perceives a symptom in patients of great fever, or a probability of their having more pustules than they would chuse, he quickly prevents both by virtue of his medicines;" for, according to this writer, "the Sutton family is in possession of an inestimable medicine, by the use of which a too great burthen of pustules can infallibly be prevented." He

* See *A sermon preached at Ingatestone, Essex, October 12th, 1766, in defence of inoculation. To which is added an Appendix on the present state of inoculation.*

adds, "'Tis feldom they have occasion much to use it; but its efficacy and power have been often tried and proved, and that very lately, on the child of Mrs. Barnard, of Witham, in Essex."—"The child was seized with the natural Small-pox, and conveyed to one of Mr. Sutton's houses. The next morning, the face and body being extremely full, Mr. Sutton marked with a pen a great number of pustules, and administered the medicine I allude to: some hours afterwards hundreds of the pustules disappeared, and among them several of those marked, leaving the little dot on the plain surface of the skin. The child did extremely well."

According to Mr. Houlton's statement, the number of persons inoculated by Mr. Daniel Sutton in the year 1764 was 1629

1765 4347

1766 7816

13,792

"To

“ To the above number (says he) should be added 6000 that have been inoculated by Mr. Sutton’s assistants ; so that he may be said to have inoculated within these three years 20,000 persons.

“ Of the above multitude he denies that a single patient has died *fairly* from INOCULATION (by him or his assistants), or from its effects. The death of two or three, reported to have died, was owing, one to his own imprudence in being drunk several times during the eruption ; the other two to complicated disorders, which would have killed them had they not been inoculated : for as to Small-pox, they had but very few pustules, and had taken their leave of Mr. Sutton.”

Though this and other accounts of Mr. Sutton’s practice magnified it beyond its real merit, yet not a doubt was entertained but that the Suttonian plan of inoculation was
Z incomparably

incomparably more successful than that of any other practitioner.

It cannot therefore appear surprising, that the attention of medical men should be directed to investigate the causes which gave this new method of inoculation such a decided advantage. Thus we find Dr. Baker (now Sir George) was the first to embark in the pursuit, and to detail the new process of inoculation by Mr. D. Sutton, which he has done as follows:—“All persons are obliged to go through a strict preparatory regimen for a fortnight before the operation is performed. During this course, every kind of animal food, milk only excepted, and all fermented liquors and spices, are forbidden. Fruit of all sorts is allowed, except only on those days when a purging medicine is taken. In this fortnight of preparation, a dose of a powder is ordered to be taken at bed-time, three several times; and

and on the following mornings, a dose of purging salt. To children, only three doses of the powder are given, without any purging salt. The composition of this powder is industriously kept a secret. But that it consists partly of a mercurial preparation, is demonstrated by its having made the gums of several people sore, and even salivated others.—The months of May, June, July, and August, are preferred as the most seasonable for inoculation. But healthy people are inoculated at any season of the year indifferently. The autumn is held to be the worst season; and an aguish habit the least proper for this operation. No objection is made to any one on account of what is vulgarly called a scorbutic habit of body, or bad blood.—The person who is to be inoculated, on his arrival at the house used for this purpose, is carried into a public room, where very probably he may meet a large company,

Z 2

assembled

assembled under the several stages of the Small-pox. The operator then opens a pustule of one of the company, chusing one where the matter is in a crude state; and then just raises up the cuticle on the outer part of the arm, where it is thickest, with his moist lancet. This done, he only presses down the raised cuticle with his finger, and applieth neither plaster nor bandage. What is extremely remarkable, he frequently inoculates people with the moisture taken from the arm before the eruption of the Small-pox, nay within four days after the operation has been performed. And I am informed, at present he gives the preference to this method. He has attempted to inoculate by means of the blood; but without success. If the operator happeneth not to be at home when the new patient arriveth, this is looked upon as a matter of no importance. And so far is he from any apprehension

apprehension of accumulating infection, that it is very common for persons, just inoculated, to lie in the same bed with a patient under any stage of the disease, as it may happen; nay, sometimes in a room where four or five people are sick. On the night following the operation, the patient takes a pill. This medicine is repeated every other night until the fever comes on. All this time moderate exercise in the air is strongly recommended. In twenty-four hours after the inoculation, the operator can often distinguish whether or no the patient be infected. He every day examines the incision; and from hence seems to prognosticate with some degree of certainty concerning the degree of the future disease. In three days after the operation (provided that it has succeeded) there appears on the incision a spot like a flea-bite, not as yet above the skin. This spot, by degrees, rises to a

red pimple; and then becomes a bladder full of clear lymph. This advanceth to maturation like the variolous pustules, but is the last which falleth off. In proportion as the discoloration round the place of incision is greater, the less quantity of eruption is expected. And, therefore, whenever only a small discoloured circle is observed, purging medicines stronger than ordinary, and more frequently repeated, are held to be necessary.

“The preparatory diet is still continued. If the fever remains some hours without any tendency to perspiration, some acid drops are administered, the effect of which is to bring on a profuse sweat; but in some cases, where the fever is very high, a powder or pill, still more powerful, is given.—In general, during the burning heat of the fever, the inoculator gives cold water. But the perspiration beginning, he orders warm balm-tea, or thin water-gruel.

gruel. As soon as the sweat abates, the eruption having made its first appearance, he obliges every body to get up, to walk about the house, or into the garden. From this time to the turn of the disease, he gives milk-gruel *ad libitum*.

“ On the day following the first appearance of the opaque spot on the pustules, to grown people he gives an ounce of Glauber’s purging salt. To children he gives a dose of it proportioned to their age. Then if the eruption be small, he allows them to eat a little boiled mutton, and toast and butter, and to drink small beer. But in case of a large eruption, he gives them, on the third day after their having taken the first dose, another dose of the same salt, and confines them to the diet ordered during the preparation.

“ What is above written is to be considered as relating only to the practice of one gentle-

man (Mr. D. Sutton). There are in different parts of the country several other inoculators, some of whom are said to have surpassed this person in the boldness of their practice. We have heard of patients who have been carried into the fields while shivering in a *rigor*; or of their having been allowed no liquor, except what they have been able to procure for themselves at the pump, while the fever has been upon them; and of their having been indiscriminately exposed to the air, in all sorts of weather, and in all seasons, during every period of the eruption. This and more has been related upon good authority: and indeed it is certain, that many thousands, of all constitutions and ages, even to that of seventy years, have within these few years been inoculated, according to the general method above described; and in general have gone through the disease almost without an unfavourable

unfavourable symptom. According to the best information which I can procure, about seventeen thousand have been thus inoculated; of which number no more than five or six have died."

After stating this as the Suttonian practice, Sir George proceeds to examine, to what causes its superior success is to be ascribed; and upon comparing it circumstantially with the other methods, he concludes that the principal advantage of it is derived from the free use of cold air, in which the Suttons indulged their patients through the whole process of the disease, to a much greater degree than what had generally been allowed. In confirmation of this opinion, he inquires into Sydenham's method of treating his variolous patients, and shows, that this accurate practitioner gradually became a greater patron of the cool regimen, in proportion to the progress which he made in his knowledge

knowledge of the disease. Many other facts are also adduced, proving the great efficacy of the cool treatment in the Small-pox.

A few months after the publication of this "Inquiry," appeared "*A Letter from Dr. Glafs (of Exeter) to Dr. Baker,*" in which the former differs from the latter, in not attributing the chief advantage of the Suttonian process of inoculation to the more free employment of the cool regimen. Dr. Glafs, however, admits that practical observations furnish undeniable evidence of the good effects of cold air, as well in common as in some very desperate cases of Small-pox; but he contends, that the extraordinary success of inoculation, under the direction of Mr. Sutton, depends upon other means. He says, the patients, on having a considerable degree of fever, are permitted to lie in bed, and that an apothecary of his acquaintance, who visited the inoculator's

tor's hospital last year, found three of them in bed, and saw the matron of the house give to each of them a small tumbler of liquor, and was informed by her they were to continue in bed until the eruption appeared. The liquor she gave them, they called punch; it had the appearance of pure water, and tasted somewhat like sherbet. This acid liquor was given three or four times a day, to all the patients in whom the eruptive symptoms were attended with much fever, and its ordinary effect was that of a sudorific; but if it did not produce perspiration, a pill or powder, still more powerful, was administered. Thus, Dr. Glass observes, it is a constant rule with the Suttons to keep their patients in a sweat for some time before the appearance of the eruption, and to proportion the degree of the sweat to the height of the fever. Hence he thinks it "highly probable, that their great success

success is chiefly owing to their singular method of disposing their patients to sweat, and then sweating them by the medicines given after inoculation, and during the eruptive fever."

The Reverend Mr. Houlton now came forward to declare, that the publications of Drs. Baker and Glas contained " little, very little indeed, of the Suttonian practice of inoculation.—For their treatment of their patients, particularly in respect to giving the medicines, depends entirely on their constitutions, and the nature of the case. As these must be various, and in many respects extremely difficult, it certainly requires much skill and experience to know and manage them. Nothing, therefore, of great consequence can be ascertained from the information even of many patients, as they can give no reason why they were treated in this or
that

that manner. The time will come perhaps when the Sutton family will generously disclose to the world their justly singular, noble, and inestimable practice of inoculation." *

This Reverend Author likewise complains of the persecution of his patron, in the following manner:—"About the beginning of last summer, the Small-pox broke out in a most violent manner at Chelmsford, in Essex, sweeping off every week many of the inhabitants. This was a fine opportunity for Mr. Sutton's enemies to surmise, invent, and propagate what calumnies they pleased; especially as he sometimes came on market-days to treat with people, who were inclined to be inoculated. If any person chanced to accompany

* How far Mr. Sutton has made the *amende honorable*, will be shown, when we examine his late publication, entitled, "*The Inoculator, or the Suttonian system of inoculation fully set forth, &c. by D. Sutton, Surgeon, who introduced the new method of inoculation into practice in the year 1763.*"

him in his carriage, it was always industriously reported, that such person was a patient, brought to inoculate from. Others could see Small-pox out in full bloom, notwithstanding the companion was frequently an acquaintance; and as it is diametrically contrary to Mr. Sutton's practice to inoculate from such kind of patients.—In consequence of these groundless insinuations and misrepresentations, an indictment was preferred last summer assize, against Mr. D. Sutton, surgeon, for a nuisance; when the grand jury not only not found the bill against him, but observed publicly in court to Lord Mansfield, that no one single article alleged against him in the indictment, was proved; and that moreover they thought it partial to prosecute Mr. Sutton in particular, since they did not find but that the apothecaries of the town inoculated likewise. They observed, however, that Mr.

Sutton

Sutton had been somewhat indiscreet, and of which indiscretion they would admonish him. But I take the liberty to say, that had the grand jury known the nature of Mr. Sutton's practice, they would not have censured him. For had the indictment been found, he would have assuredly non-suited his enemies, and have proved beyond a possibility of doubt, that he never brought into Chelmsford, a patient who was capable of infecting a bystander, notwithstanding such person would convey infection by inoculation. However paradoxical this may seem, it is truth, and would have been proved to a demonstration. But the grand jury justly saved Mr. Sutton from being obliged in his defence to discover one of the most essential parts and secrets of his profession."

To the above succeeded "*An Essay towards an investigation of the present successful and most*
general

general method of inoculation, by B. Chandler, Surgeon, at Canterbury.” This gentleman informs us, that a number of persons of all ranks had been inoculated at Canterbury, according to the Suttonian plan, by Mr. Peale, a surgeon of eminence at Maidstone, and one of the partners of Mr. Sutton; and that in Mr. Peale’s absence, he had been by many desired to attend, so that by these opportunities, and by frequent conversations with Mr. Peale, he was enabled to carry the investigation of the new practice farther than it had been done by Drs. Baker and Glafs. Nay, he made trials of it upon great numbers at Chilham, and says his patients, in every stage of the Smallpox, were “exact copies of Mr. Peale’s patients.” His method of conducting the process of inoculation, and which he considers as being essentially the same with that of Mr. Sutton, is thus described:—“ My patients
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have taken, if adults, a dose of calomel, adapted to their age and strength, at bed-time, and purged it off with Glauber's salt next morning; this has been repeated to the third time; at the intermediate distance of two days from each. Children have sometimes taken a purging powder, with calomel, three times, of a morning only.—In regard to diet I have strictly forbid all animal and spiced food, and all fermented liquors, not only through the preparatory course, but in general through the whole of the disease, constantly advising them to return to their usual way of living gradually and cautiously. On the day following the last dose of physic, I have performed the operation; which I do by wetting my lancet in the moisture of the pustule, which rises on the arm of an inoculated person, before the little feverishness and general eruption appear; and then making two very small oblique

punctures with it in the arm of the person to be inoculated, directing the instrument not perpendicularly, but horizontally, so as to divide the cuticle from the cutis underneath; as soon as the least tinge of blood appears, I wipe my lancet on the wound, and make another puncture in the same manner, immediately pulling down the sleeve, and applying neither plaster nor bandage. From this time I take care to keep my patients cool and open, advising moderate exercise in the open air, and giving to most, except very young children, two or three pills every other day, or thereabout, from the fifth after inoculation, composed of aloes, kermes mineral, and camphire (See Dr. Glass's pamphlet.) If the preparatory medicines have been inactive, these supply their place; if the patient has been irregular, these are as likely as any thing to correct the inconveniences which may arise from

from it. And as something wrong in the habit may often justly be suspected, when the punctures do not inflame so much as usual, I give the pills, in such cases, somewhat more freely. This is no new observation; it has often been experienced in the old inoculation, that those patients had the disease most favourably, whose inoculated arms discovered an earlier inflammation, a more considerable swelling, and a broader disk of surrounding redness. With children, Glauber's salt, or Sena tea, and with infants, a little manna will very well supply the place of the pills. I do not pretend they have any specific powers; indeed, I think they have not: but they are more commodiously carried about, and as easily taken as any other form of medicine. I have Boerhaave's sanction for their use, and a strong probability of their being the same as Mr. Sutton's: I have

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always seen them operate in the same manner, and answer every intention equally well. From the seventh to the ninth day, I expect my patients to begin to complain a little; but some few entirely escape: then I give nitre, dissolved in a decoction of oats, acidulated with lemon juice, or weak spirit of vitriol, *ad libitum*. This cooling liquor is agreeable to the palate, assuages their thirst, if they have any, and for the most part proves a little sudorific, if taken at bed-time. In a day or two from their first beginning to complain, the pustules seldom fail to appear immediately, upon which all sickness vanishes, and I have never heard one complaint afterwards."—

Mr. Chandler, after a very minute examination of Mr. Sutton's practice, concludes, that the success of this celebrated inoculator does not principally depend upon his mercurial preparation, nor yet upon the free exposure

exposure of his patients to cold air, as alleged by Sir George Baker. Sweating the inoculated, he asserts, Mr. Sutton never attempts, and therefore ascribes but little efficacy to what has been called the punch; the pills he thinks useful merely as evacuants, not as possessing any specific power; whence he cannot impute the chief advantage of the Suttonian system of inoculation to any of the above causes. In short, the grand secret in the new mode of inoculation, Mr. C. says, is “the taking of the infecting humour in a crude state before it has been, if I may allow the expression, ultimately variolated by the succeeding fever.” This opinion, he thinks, is fully confirmed by Mr. Houlton’s publication, in which it is asserted that Mr. Sutton “never brought into Chelmsford a patient who was capable of infecting a by-stander, notwith-

standing such patient could convey infection by inoculation. However paradoxical this may seem, it is a truth, and would have been proved to a demonstration.—But the grand jury justly saved Mr. Sutton from being obliged, in his defence, to discover one of the most essential parts and secrets of his profession.”

Thus it appears, that the three first persons who investigated the Suttonian practice of inoculation, all differed in opinion respecting the most essential point of it; successively ascribing its superior success to the more free use of cold air, to sweating, and to inoculating with crude unconcocted variolous matter.— And here I may add, that Baron Dimfdale, who immediately afterwards gave his sentiments on this subject, says, “Should it be asked then, To what particular circumstances the success is owing, I can only answer, that
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although the whole process may have some share in it, in my opinion it consists chiefly in the method of inoculating with recent fluid matter, and the management of the patients at the time of eruption."

The present method of inoculating for the Small-pox, published by the last mentioned writer in November, 1766, as exhibiting a very complete view of the subject, met with the universal approbation of the faculty; and the instructions it contains have almost, without exception, deservedly continued ever since to regulate the practice of inoculation. It is true the substance of what is advanced by the Baron, was before made known by the authors above noticed, but in this work the whole process was more minutely explained, and its supposed mysteries removed: the advantages of the new method of inoculating

were likewise satisfactorily ascertained by more extensive experience.

Baron Dimsdale first enters upon the consideration “ of the age, constitution, and season of the year, proper for inoculation.” When the age is left to his choice, he declines inoculating children less than two years old. The subjects deemed by him unfit for the operation are those who labour under any acute or critical diseases, or their effects; and also those in whom there are evident marks of corrosive acrimonious humours, or who have a manifest debility of the whole frame, from inanition, or any other cause. With respect to seasons, he has observed, that “ inoculated persons generally had more pustules in spring than at any other time of the year; and epidemic diseases being commonly most frequent in autumn, especially fluxes, intermittents, and ulcerated sore throats (all which
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are liable to mix more or less with the Small-pox), the autumn upon this account does not seem to be the most favourable season in general." But he thinks we may safely inoculate at all seasons, provided care be taken to screen the patients as much as possible from heat in summer, and to prevent them from keeping themselves too warm, and too much shut up from the weather, in winter. However, he judges it prudent to avoid inoculation while any peculiar epidemic diseases are prevalent. He directs the preparatory regimen, so as to reduce the patient, if in high health, to a low and more secure state; to strengthen the constitution, if too low; to correct what appears vitiated; and to clear the stomach and bowels, as much as may be, from all crudities and their effects. Young or middle-aged persons, enjoying a good state of health, are strictly confined to a milk and vegetable diet
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for nine days previous to the operation; during which period, they are directed to take the following powder, three times, on going to bed at night, and a dose of Glauber's salt each succeeding morning.—“ The powder is composed of eight grains of calomel, the same quantity of compound powder of crabs claws, and one-eighth part of a grain of emetic tartar.” For women, or children, the dose is to be lessened according to their age and strength. To those who are of a tender delicate constitution, or valetudinarians, he directs a milder medicine, and rather of the alterative than the purgative kind; indulging some with light animal food, and with a glass or two of wine in case of lowness. The mode of inoculating to which the Baron gives the preference, is thus described:—“ The patient to be infected, being in the same house, and if no objection is made to it, in the same room, with one who
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has the disease, a little variolous matter is taken from the place of insertion, if the subject is under inoculation, or a pustule, if in the natural way, on the point of a lancet, so that both sides of the point are moistened.—With this lancet an incision is made in that part of the arm where issues are usually placed, deep enough to pass through the scarf skin, and just to touch the skin itself, and in length as short as possible, not more than one-eighth of an inch.—The little wound being then stretched open between the finger and thumb of the operator, the incision is moistened with the matter by gently touching it with the flat side of the infected lancet. This operation is generally performed in both arms, and sometimes in two places in one arm, a little distance from each other.”—Neither plaster nor bandage is to be applied to the inoculated part. The Baron gives a preference

preference to the matter taken during the eruptive fever, as he supposes its activity is at that period the greatest: and if the disease is to be communicated from an inoculated person, he takes the matter, not from the secondary pustules, but from the place of inoculation. The second day after the operation, if the inoculated part is viewed with a lens, he says there generally appears a kind of orange-coloured stain about the incision; and the surrounding skin seems to contract. At this time he orders the following medicine to be taken at bed-time: Calomel and compound powder of crabs claws, of each three grains, emetic tartar 1-16th of a grain. " On the fourth or fifth day, upon applying the finger, a hardness is to be felt to the touch. The patient perceives an itching on the part, which appears slightly inflamed; and under a kind of vesication is seen a little clear fluid;

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the part resembling a superficial burn. About the sixth, most commonly, some pain and stiffness is felt in the axilla; and this is a very pleasing symptom, as it not only foretells the near approach of the eruptive symptoms, but is a sign of a favourable progress of the disease.— Sometimes on the seventh, oftener on the eighth day, symptoms of the eruptive fever appear; such as slight remitting pains in the head and back, succeeded by transient shiverings and alternate heats, which in a greater or lesser degree continue till the eruption is perfected.

“ The inflammation in the arms at this time spreads fast, and upon viewing it with a good glass, the incision for the most part appears surrounded with an infinite number of small pustules, which increase in size and extent as the disease advances. On the tenth or eleventh day, a circular or oval efflorescence

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is usually discovered furrounding the incision, and extending sometimes nearly half round the arm, but more frequently to about the size of a shilling; and being under the cuticle, is smooth to the touch, and not painful. This appearance is also a very pleasing one; it accompanies eruption; every disagreeable symptom ceases; and at the same time it certainly indicates the whole affair to be over; the pain and stiffness in the axilla also going off."

The above is a description of the disease in its mildest and most favourable form, under which it seldom requires any further medical assistance. But when the eruptive symptoms come on with more severity, a repetition of the powder last mentioned, is directed; and on the following morning, three or four stools are to be procured by a laxative draught, *e. g.* "Infusion of senna two ounces, manna half an ounce, tincture of jalap two drams."

In some cases we are told the state of the incision is such, that for several days the effects of the inoculation can barely be perceived, "the colour about the wound remaining pale, instead of changing to red or inflamed; the edges of the incision spread but little, they remain flat, scarcely rising at all, and are attended neither with itching or uneasiness of any kind. Nay, sometimes on the fifth, and even on the sixth day, the alteration is so little as to make it doubtful whether the infection has taken place.—When matters are in this state, the appearance is unfavourable, and implies a late and more untoward disease; to prevent which I direct the powder or pill to be taken each night, and in case it fails to operate by stool, or there is the least disposition to costiveness, an ounce of Glauber's salts, or more commonly the laxative draught already mentioned, is given in the morning,

morning, once or twice, as the case may require. This course forwards the inflammation, which I always wish to see; as I have constantly observed, that an early progress on the arm, and an early commencement of the eruptive complaints, portend that the distemper will be mild and favourable; and on the contrary, where both are late, the symptoms are usually more irregular, and untoward.—Instead of confining the patient to his bed, or room, when the symptoms of the eruptive fever come on, he is directed, as soon as the purging medicine has operated, to keep abroad in the open air, be it ever so cold, as much as he can bear, and to drink cold water, if thirsty, always taking care not to stand still, but to walk about moderately, while abroad.”—In some instances, although the Baron found the eruptive symptoms extremely violent, and the patients almost incapable

pable of motion, and apprehensive of cold as the greatest evil, yet he has, notwithstanding, persuaded them to rise out of bed, and go out of doors, though led sometimes by two assistants, and allowed them to drink as much cold water as they chose, without their suffering the least sinister accident: on the contrary, their spirits were revived, and every symptom was greatly relieved.—“ If any uncommon languor happens, a basin of small broth, or a glass of wine, is allowed in the day, or some white-wine-whey at bed-time; which are indeed at any time allowed to tender, aged, or weakly persons. After the eruption is completed, if occasion requires, they are indulged in a little well boiled meat of the lightest kind, as chicken, veal, or mutton.”

The most essential parts of this plan of inoculation, published by Baron Dimsdale, were confessedly borrowed from the practice

of Mr. Daniel Sutton, and first adopted by the former in January, 1765. He began at that time to employ mercurial purgatives, and to confine his patients to a stricter regimen: he likewise exposed them to the open air in the coldest season of the year; and, finding no ground for his former apprehensions of danger from bringing the person, about to be inoculated, into the presence of one labouring under the Small-pox, he performed the operation with recent fluid matter. The great advantages which were derived from this mode of treatment, induced him to remark, “that, instead of supposing the fever in the Small-pox to be the instrument employed by nature to subdue and expel the variolous poison, we should rather consider it as her greatest enemy, which if not vigorously restrained, is apt to produce much danger.”—He adds, “Pursuant to this opinion, besides keeping my patients in
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the open air, which I had learned from others, I first directed the mercurial and antimonial medicine, and the laxative course in the eruptive state."—

The Baron's experience of the new plan of inoculation, previously to his publication of it, was only formed on two years practice; yet in that time his observations had been made with such accurate discrimination, and his opinions were so justly founded, that in the six succeeding editions of his work, he never found occasion to introduce the least alteration.

Several other tracts upon inoculation were published before the year 1768; but the consideration of these I have reserved for the second volume.

END OF VOL. I.

ERRATA.

Page 194, for Whitaker, read *Nettleton*.

Page 255, line 2, after published, read, "*A Dissuasive against inoculating, &c.*"

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The text for Whiston, read Whiston.
The text for the other published tract, read, "A Dissertation on the Nature of the Small-Pox."















