

The report on the cow-pox inoculation, from the practice at the Vaccine-Pock Institution, during the years 1800, 1801, and 1802, read at the general meeting of the governors, Feb. 7th, 1803 at the Shakspeare Tavern / written by the physicians to the Institution.

Contributors

Vaccine Pock Institution
Royal College of Physicians of Edinburgh

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THE
REPORT

Ed. Ry. ON THE *Med. Pri.*

Cow-Pock Inoculation,

From the Practice at the

VACCINE-POCK INSTITUTION,

DURING THE YEARS 1800, 1801, AND 1802,

Read at the General Meeting of the Governors, February 7th, 1803,
at the Shakspeare Tavern;

WRITTEN BY

THE PHYSICIANS TO THE INSTITUTION;

TO WHICH ARE PREFIXED,

Two painted Engravings of Cow-Pock and other Eruptions.

*Ipsæ Repertor opis Vaccas pavisse Phœæas
Fertur.*

OVID, V. EP.

— This is an Art
Which does mend Nature, change it rather; but
The Art itself is Nature.

WINTER'S TALE.

LONDON:

PRINTED AND SOLD BY HENRY REYNELL, 21, PICCADILLY—PRINTER
TO THE INSTITUTION; AND MAY BE HAD OF BECKETT, PALL-MALL;
MILLER, OLD BOND-STREET; AND OF W. SANCHO, AT THE INSTITU-
TION, NO. 44, BROAD-STREET, GOLDEN-SQUARE.

—♦♦♦—
1803.

R26836

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REPORT

Colony of the Antilles

CONSTITUTION

THE ANTILLEAN INSTITUTION

... ..

LONDON

TO THE RIGHT HONORABLE

The Earl of CHOLMONDELEY,

PRESIDENT,

To the Right Hon. Lord PETRE, F. R. S. &c.

The Rev. Sir GEORGE LEE, Bart.

Sir GEORGE BAKER, Bart. F. R. S. &c.

H. J. DE SALIS, D. D. F. R. S.

WILLIAM ADAM, Esq.

WILLIAM DEVAYNES, Esq. M. P.

VICE-PRESIDENTS;

AND TO THE

TRUSTEES, TREASURERS, AND GOVERNORS,

OF THE

Vaccine-Pock Institution,

THIS REPORT,

INTENDED FOR DISSEMINATING THE KNOWLEDGE,
AND EXTENDING THE HISTORY, OF THE VACCINA,

Is respectfully dedicated by their

Very obedient and most humble Servants,

GEORGE PEARSON,

LAWRENCE NIELL,

THOMAS NELSON.

*Institution, No. 44, Broad-street,
Golden-square, May, 1803.*

TO THE RIGHT HONORABLE

THE LORDS OF CHOLMONDELEY

PRESIDENT,

THE RIGHT HONORABLE LORDS OF THE

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THE RIGHT HONORABLE LORDS OF THE

VICE-PRESIDENTS;

AND TO THE

STATES, TREASURERS, AND GOVERNORS

OF THE

GRADING POOL FUNDATION

THIS REPORT

AND THE DISSEMINATING THE KNOWLEDGE

OF THE HISTORY OF THE VARIOUS

RESPECTIVELY OF THE

VERY OBEISANT AND LOYAL SERVANTS

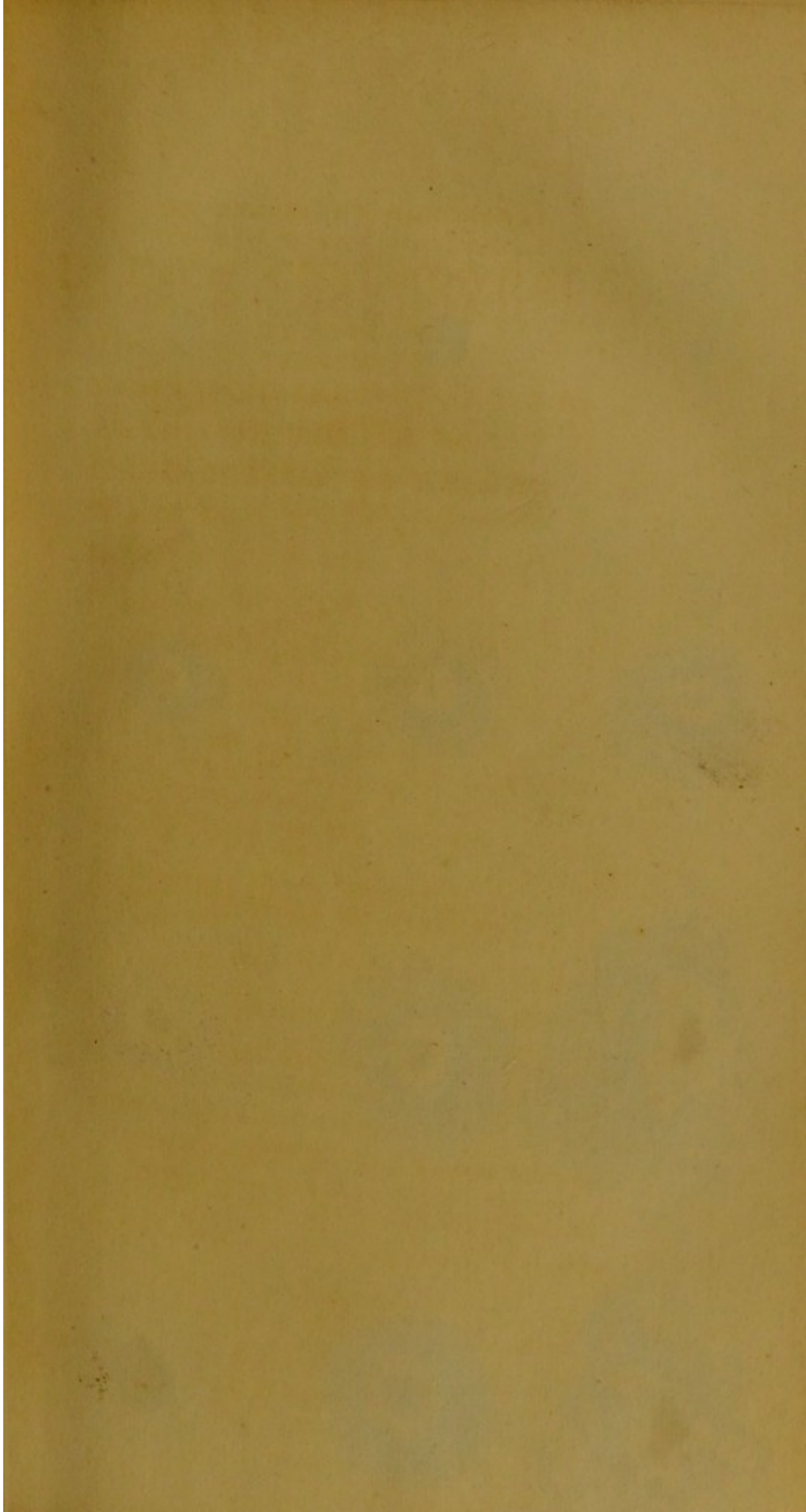
GEORGE PEARSON

LAWRENCE NIELSEN

THOMAS NELSON

Printed by the

the year 1895



S.P
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C.P

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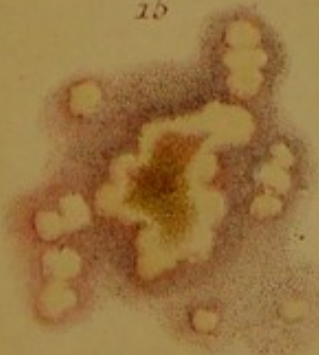
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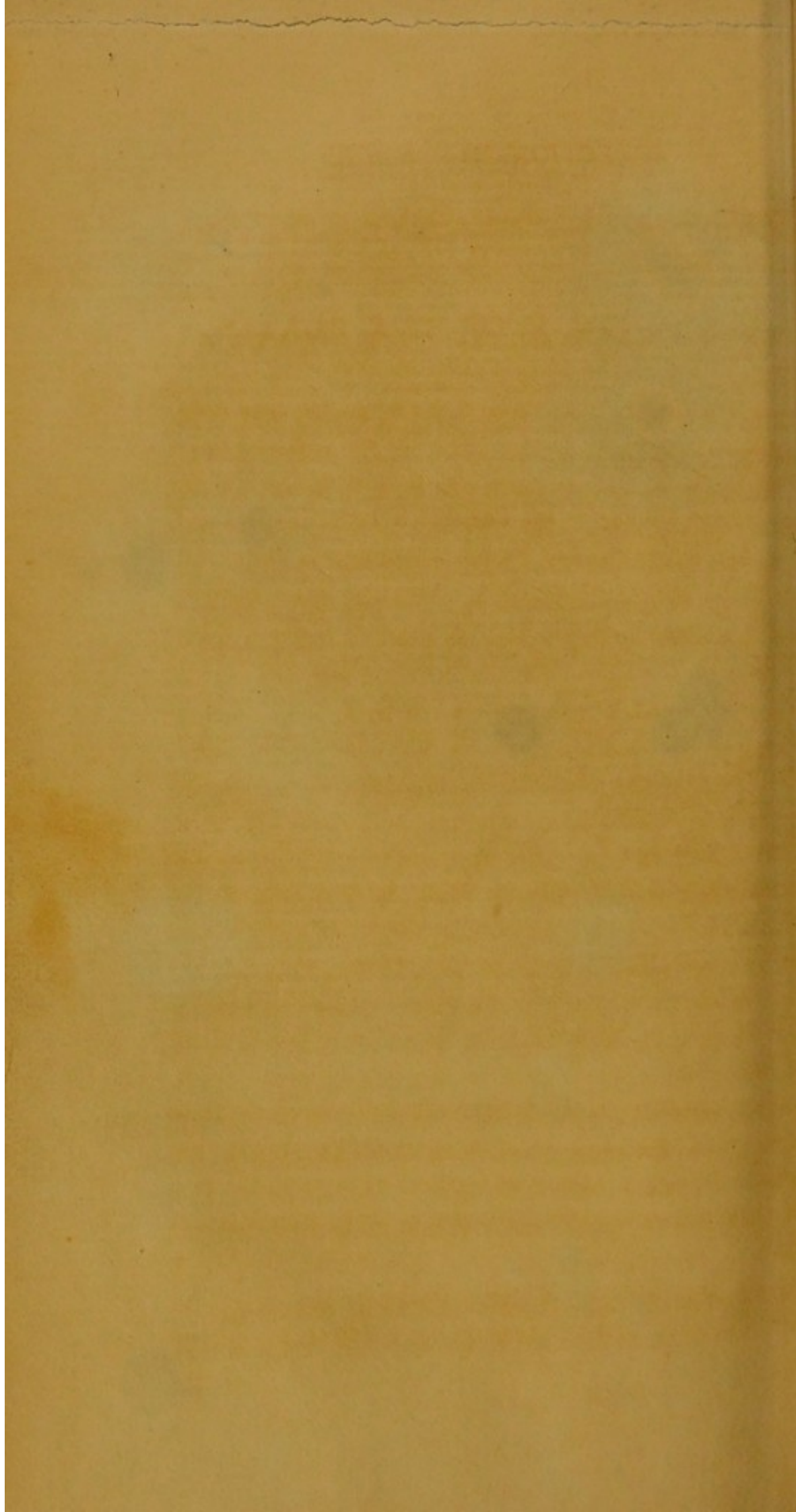


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16





DIRECTION TO BINDER.

Place the Plate with three series of pocks before the other Plate.

EXPLANATION OF THE PLATES.

THE 1st Plate exhibits three series of pocks; one designated S. P. represents the Small-Pox in *four* different stages of the pock of the inoculated part, *namely*, the nascent vesicle of the 4th day.—2d. The *vesicle* becoming a *pustule* on the 9th day.—3d. The *pustule* becoming a scab or crust. 4th. In its state of entire scab. The two series comprehended under the bracket, with the title C. P. are two examples of the Cow-Pock also in four stages, viz. of nascent vesicle.—2d. The full grown vesicle, or at its *maximum*.—3d. The vesicle undergoing the scabbing process.—And 4th. The vesicle in one instance become partly a scab, and in another, wholly so.

The 2d Plate, 1 fig. 12th day—1 and 2 are intended to shew the *oval* or *round* form of the pock, according to the inoculation by a *scratch* or *puncture*, which were inflicted on the same arm, in the situation represented. These pocks are also offered as characteristic specimens of them in the scabbing process, with the kind of areola which is by far the most usual.

1 Fig. 22d day—1 and 2 represent the form of the scabs of the above pocks 1, 2, but from an oversight they are not disposed according to the same situation of them on the 12th day: they are given as characteristic of the peculiar Vaccine scabs.

2 Fig. represent the Vaccine Pocks of No. 1221, described in p. 44. to shew the effect of an intervening distemper

per in retarding the progress through the respective stages, and to shew the smaller size of the pock from a second Inoculation.

Fig. 2, 11th day.—1. The pock of the 19th day from first Inoculation, of a somewhat unusual colour, but in the common vesicular and incipient scabbing state of the 11th day.

2. The pock of the 11th day from the second Inoculation, of a different colour, and much smaller than the former, but in other respects like the 11th day ones, included in the red areola of the older pock.

Fig. 2, 19th day.—1 and 2 are the scabs of the 19th day from the first Inoculation, and 11th day from the second, on the arm of a different subject inoculated at the same time and manner, with the same matter as the subject of the pocks, 2 fig. 1, 2, 11th day, to shew, first, the influence of the above intervening disorder. 2d. to shew that the scabbing process begins immediately after the constitutional affection, however early the stage of the pock from the second Inoculation. These are also considered as characteristic Vaccine-Pock scabs.

Fig. 3. *A pock not Vaccine, 7th day*, is intended to shew a different kind of eruption or pimple on the 7th day from the Vaccine-Pock, being produced by Inoculation of Cow-Pock matter on the arm of a person who had undergone the Small-Pox. Eruptions, not Vaccine, have been vaguely called *spurious Cow-Pock*, as if an eruption with constant and peculiar properties were excited by matter mistaken for Vaccine matter; or as if real Vaccine matter in certain circumstances excited such non-Vaccine eruptions.

Fig. 4. comprehends representations of three singular pocks, in case No. 1196, p. 96.

3, 15th day—*Arm* shews the *scab* on the 15th day of an uncommon colour, but of the characteristic form, and usual size of the ordinary sort of Cow-Pock. A common kind of cicatrix was subsequently observed.

2, 8th day—An eruption on the shoulder scabbing on the 8th day after its appearance, and the 15th from the day of Inoculation. A scar was left by this eruption.

1, 9th day—Exhibits one of the two eruptions on the *nates* on the 9th day from its appearance, and 15th from the Inoculation; now in the scabbing state, of a different colour, but of the circular defined figure of the Cow-Pock, and of the natural size, which is larger than common. A deep cicatrix was seen from this eruption on Friday, April the 22d.

Note, Two eruptions on the *nates* appearing on the 8th day after Inoculation as large as on the inoculated parts of the arms, the matter of which excited the Vaccine in No. 1261, p. 96, raised a doubt whether or no these eruptions were not from matter casually applied to the *nates*, and not from the Vaccine constitutional affection; and on enquiry we find, a fever really began on 7th day after Inoculation, the day after these two eruptions. But on the other hand, the subsequent eruptions during the fever, (if they were of the same kind as on the *nates*) seem to shew that all the eruptions were from the constitutional affection. Future occurrences must determine these questions.

5 Fig. 1, 2 Are representations of the Chicken-Pox on the 2d and 3d day after their eruption.

3 Shews the state of the Chicken-Pock disfigured by scratching.

6 Fig.—Shews a cicatrix from the inoculated Vaccina.

REPORT
ON THE
COW-POCK INOCULATION,
FROM THE PRACTICE
AT THE
Vaccine Pock Institution.

PREVIOUSLY to the report which we shall now deliver from our experience of the Vaccine Inoculation, at this Institution, it may, probably, be not uninteresting to a part of the Governors, to be made acquainted with the motives for this Establishment. In executing this part of our design, we cannot avoid entering into a short detail of the history of the Cow-Pock.

Motives for establishing an Institution.

In the month of June, 1798, Dr. JENNER published his "Enquiry into the causes and effects of the *Variolæ Vaccinæ*;" the first authentic account of this disease, otherwise called

Brief history of the Cow-Pock.

Facts known before Jenner's publication.

the Cow-Pock. Many facts concerning it were antecedently known among the farmers, and a few practitioners in several of the counties of England. Some of these facts had been slightly noticed by preceding writers.* The observations alluded to, were, that persons, principally servants, employed in milking cows infected with the Cow Pock, and contracting sores, became unsusceptible of the Small-Pox.—That the Cow-Pock never proved fatal—that it was not attended by eruptions—that it was not infectious, except by Inoculation—that considerable local affection was occasionally produced, though frequently very little—that in some instances persons were inoculated with the matter of Cow-Pock, purposely to prevent the Small-Pox.

The publication above-mentioned, for which the world are so greatly indebted to Dr. JENNER, being (as already said) the first expressly on the Cow-Pock, contains seven cases of Inoculation, viz. three from the cow to the human subject, the first of which was in May,

* See Woodville, on Inoculation; Adams on Morbid Poison; and Beddoes Translation of Gimbernat, 1795.

1796; two others in 1798; four from one human subject to others in succession, likewise in 1798.

The same authority informed us also, that a pretty smart Fever supervened, about the 7th to the 9th day after Inoculation—that the Cow-Pock was so like the Small-Pox, as to be undistinguishable from it, by the most experienced inoculator—that the affection of the inoculated part was so considerable as to require external applications—that persons who had gone through the Cow-Pock, were still susceptible of the same disease—that persons who had gone through the Small-Pox, were still susceptible of the Cow-Pock—that the grease of horses produced the Cow-Pock in cows—that persons who had been infected by the matter of grease, were in a great measure unsusceptible of the Small Pox. Accordingly the author proposed this query in such terms, as were fitting and judicious from the evidence then possessed, as related by himself; “may we not infer that a mode of Inoculation may be introduced, preferable to that at present adopted, especially amongst those families, which, from previous circumstances, we may judge to be pre-disposed to have the disease unfavourably?” But it appears no person

Facts communicated in Jenner's book.

In 1798, after Jenner's publication, no one was in possession of matter.

Cow-Pock epi-
 botic in Lon-
 don, Jan. 1799,
 the matter of
 which used to
 set on foot Vac-
 cine Inoculation.

Four thousand
 persons inocu-
 lated in 1799, in
 and near Lon-
 don.

son was in possession of Vaccine matter, during the remainder of the year 1798; except Mr. Cline, who inoculated one patient, but he did not avail himself of the opportunity of collecting it. Inquiries being made among the farmers and others, concerning the history of the Cow-Pock, matter was in consequence obtained in January, 1799, on the appearance of the disease, amongst the cows of Mr. Harrison in Gray's-inn-lane, and those of Mr. Willan in Mary-le-bone fields. From these sources only the Vaccine Inoculation was begun and carried on in London, and in several provincial towns, with great zeal by many practitioners; so that by the termination of the year 1799, four thousand persons, at least, had been inoculated, principally in London and its neighbourhood. This one year's experience then, furnished eight hundred-fold additional evidences, to those first communicated on the subject; by which additional evidences, the following facts were confirmed or discovered.

1st. That the Cow-Pock destroyed the susceptibility of the Small-Pox.

2d. That

2d. That the Cow-Pock was not infectious by effluvia.

3d. That, except in cases where the patient had been exposed to the action of variolous contagion, there were no eruptions like the Small-Pox.

4th. That only one had died during the new Inoculation; which accident* was at first considered to be ambiguous, but which has been subsequently regarded as a case of a different disorder, and in all likelihood, the Small-Pox.

Facts ascertained
by Inoculation in
1799.

5th. That the local affection was far less than in the inoculated Small-Pox.

6th. That, in most instances, there was no constitutional affection observable in more than four cases out of ten.

7th. That the Cow-Pock cannot take place in the same person after the Small-Pox.

* It occurred in the Small-Pox Hospital, see Woodville's Report for 1799.

8th. That

8th. That persons cannot undergo the Cow-Pock, who have already gone through this affection.

9th. That the figure and other external characters of the Cow-Pock, contrary to representation, were quite different from those of the Small-Pox.

10th. That no consequent disorders took place, imputable to the Cow-Pock, except slight eruptive ones.

The advantages of the inoculated Vaccina, over the inoculated Small-Pox, were, by these facts, plainly manifested, and now a prospect was disclosed highly gratifying to benevolence, namely, that of extinguishing the most loathsome, and extensively fatal of all diseases—the Small-Pox. These considerations very naturally excited the desire to have an Institution solely for the purpose of Vaccine Inoculation, especially with the following intentions.

Prospect of exterminating Small-Pox, by practice in 1799.

1st. To secure the succession of matter.

2d. That

2d. To extend the benefits of the new Inoculation to poor individuals.

Objects of an Institution at the close of year 1799.

3d. To promote the spreading of it among all ranks of persons, by furnishing additional satisfactory evidence.

4th. To investigate more fully the history of this Vaccine disease.

It would be unjust, and indeed ungrateful, to omit acknowledging that the Vaccine Inoculation had been carried on uninterruptedly with great zeal at the Small-Pox Hospital, from the January, 1799, preceding, where, by this time, above two thousand persons had been inoculated. On this occasion, the conduct of the physician to that hospital, in sacrificing his ease and interest to introduce the Cow-Pock Inoculation, in opposition to the prejudices of a great part of the public, and at the risk of the displeasure of the Governors, ought to secure to his name eternal honour, and the gratitude of the whole human race. Here also we must not pass unnoticed the opposite conduct of other physicians in similar situations, who, without trial, and by absurd arguments, cried down the pretensions

Practice of the Small-Pox Hospital in 1799.

Dr. Woodville's liberal conduct.

tenfrons of the new candidate, Cow-Pock Inoculation, and endeavoured to excite the resentment of the public against it, by stirring up and fomenting their prejudices.

But further ; another proof of Dr. Woodville's magnanimity was the becoming one of the original founders of this Institution, and his being willing to accept the station of one of the physicians, had it been found consistent with his engagements to his other public office.

It may be necessary to observe, that our Institution was in no respect to be considered as injurious to the prosperity of the Small-Pox hospital, for

New Institution
did not interfere
with the interest
of the Small-Pox
hospital.

1st. The sole object of our Institution was to carry on the new Inoculation, which required for its support, more than one establishment.

2d. Many persons objected to the practice in an hospital, which contained Small-Pox patients, on account of the possible agency of the poison of the two diseases at the same time.

3d. Many

3d. Many persons willing to be inoculated for the Cow-Pock, disliked the attendance for it, at a public hospital, containing patients of a different description.

4th. It was necessary, from the extent of the town and its population, that there should be houses for Inoculation in different situations.

According to the views above-stated, a meeting was held on December 2d, 1799, at Dr. Pearson's house, when it was agreed and resolved—

1st. "That there is already sufficient evidence of very decisive advantages of the inoculation of the Cow-Pock over that of the Small-Pox, in a number of points argued at the meeting.

First meeting of the Institution at Dr. Pearson's house in December, 1799.

2d. That in order to extend the benefits of the new inoculation to the more indigent ranks of society; to obtain new and satisfactory evidence for those who may be unacquainted with the practice, and to expedite the general substitution of the Vaccine Pock, for the Small-Pox Inoculation, a charity shall be established to be called "THE INSTITUTION FOR THE

Resolution of the first meeting.

INOCULATION OF THE VACCINE, OR COW-POCK.

Officers appointed.

3d. Among the earliest, who kindly accepted of offices for the economical management of the Institution, were

VICE-PRESIDENTS.

THE RIGHT HON. LORD PETRE
SIR WILLIAM LEE, BART.
SIR GEORGE BAKER, BART.
HENRY JEROME DE SALIS, D.D.
WILLIAM ADAM, ESQ.
WILLIAM DEVAYNES, ESQ.

AND

STEPHEN AISLEY, ESQ. *Treasurer.*

It may be most fit to notice in this place, that the Right Hon. the Earl of Cholmondeley was pleased, subsequently to this period, to honour the Institution by becoming its president.

4th. The gentlemen who were agreed upon, and accepted of the offices for the medical department, at first, were Dr. Pearson, Dr. Nihell, Mr. Keate, Mr. Rush, Mr. Robert Keate, Mr. Gunning, Mr. Brande, Mr. Rivers, Mr.

Mr. Everard Brande; to whom were subsequently added, Dr. Nelson, Mr. Payne, and Mr. Carpue.

5th. Addresses, and plans of the designs of the Institution, were published to obtain subscribers, and give notice to the public of the practice proposed. On the 14th of January, 1800, the members of the Institution held their first meeting at a house in Warwick-street, Golden-square, a part of which was hired for their use. At this meeting, various arrangements took place for managing the new establishment, and for the practice of Inoculation which was begun the same month.

House hired in Warwick-street for the practice, begun in Jan. 1800.

In giving a history of this Institution, we should have been glad to have been able to have left unrecorded a circumstance, although, on account of it, both the original Founders in general, and individual ones have been long exposed to repeated obloquy in circles of conversation and in periodical publications. It was determined to endure these reflections so unmerited, rather than expose to the eye of the public, a transaction which some persons might consider as more dignified to pass by

Reflections on the Founders respecting Dr. Jenner.

unnoticed : but the very recent and probably future repetition of the accusation here alluded to, appears to demand from us an explanation ; for now we should by silence seemingly admit the charge. Here, however, from the same motives which induced us hitherto to make no reply, we shall now state what is barely necessary on so disagreeable a transaction, and that with extreme brevity.

The public have been told, even in terms of invective, and reports have been industriously propagated, that the Founders have been guilty of a flagrant act of injustice in excluding Dr. JENNER from this Institution. If our adversaries had but been thoughtful, candid, and judicious enough to have ascertained the truth of the supposed fact, to which their censures were imputed, they would have spared themselves the trouble of going further, granting (which we are not required in propriety to do) that it was an act of injustice to do what was asserted. The truth is, that Dr. Jenner was invited by one of your Reporters, Dr. Pearson, in a letter addressed to him at Berkely, his place of residence, December 10th, 1799, to belong to the Institution, under the most honorable

norable title then deemed consistent, that of consulting or corresponding physician. This proposal was declined, without intimating that any other situation would be more agreeable. Subsequently, in order to shew due respect and deference to some friends of the Institution, Mr. Brande was deputed by the Vaccine Medical Committee to wait upon Dr. JENNER, then in town, and assure him of the willingness of each and all the medical department to make any arrangement agreeable to induce him to be attached to the Institution; the committee even went so far as to authorise Mr. Brande to say, Dr. JENNER might make what alterations he pleased in the * plan of the Institution, and that if any of the officers were not agreeable to him, there was not one who was not willing to resign. After repeated applications and much delay in the spring, 1800, all the proposals were declined, it being at last said, it was thought best, that there should be no Institution.

Dr. Jenner repeatedly applied to by the Institution, to be attached to it.

* At the Committee, on Tuesday 11th February, 1800, It was resolved, That Mr. Brande, the chairman, should wait on Dr. JENNER, and settle with him respecting such a situation as may be agreeable to him in the Institution.

Vide MINUTE BOOK.

Unless

The physicians
conceded to Dr.
Jenner what was
not legal, on ac-
count of respect
to the promul-
gator of the Cow-
Pock.

Unless it be exacted by a continuance of censures, we shall avoid explanation (which might, at this time, seem invidious) to make it appear that the offers, on the part of the physicians of the Institution, were more than could be strictly or even legally justified, but that they conceded their rights from their respect for the promulgator of a most beneficial practice.

Practice an-
nounced to the
public in Jan.
1800, and car-
ried on in War-
wick-street, the
whole year.

Arrangements were so made as to announce to the public the commencement of the new practice at a house, No. 36, Warwick-street, Golden-square, on Tuesday, January 21st, 1800, under the direction of the above-named medical establishment. Here the practice was carried on 'till the commencement of the following year, when the Institution was removed to a larger and more commodious house, No. 5, Golden-square; where the business has been since that time conducted according to the annexed plan*.

During the first six months after the establishment of the Institution, in part from the

* See the plan annexed to this report.

novelty of the practice, but principally from the opposition to the arrangement, only a small number of subjects were inoculated. However, a sufficient number applied to keep up the succession of matter, and generally to be able to supply the demand for inoculation in other places.

From the 18th of January to the 31st of December, were inoculated - - -	317	Number ino- culated up to Dec. 1802.
From the 1st of January, 1801, to De- cember 31st - - - - -	287	
From the 1st of January, 1802, to De- cember 31st, 1802 - - - - -	569	
	1202	

Of these a considerable number were subsequently inoculated for the Small-Pox, but owing to apprehensions entertained by some of the governors, that the variolous matter might co-operate with the vaccine, and thereby occasion mistakes and confusion, as was at that period supposed to have happened in other places, it was desired that the medical establishment should not for a long time introduce into
their

their apartments a particle of the Small-Pox matter. This accounts for so many remaining on the register sheets uninoculated in the years 1800 and 1801: but a great number of persons would not be at the trouble of, or were prejudiced against a second inoculation; and many, from a conviction of security by the vaccina, refused to accept of the counter proof.

Grand object was the preservation of the succession of matter, and for determining the laws of action of the Vaccine poison.

We are aware that a greater number of persons will be expected to have been inoculated for the Cow-Pock than are above stated; but it must be considered, that the house for this practice is not situated in a part abounding with poor people; and when it is also considered, that the grand objects of the Institution were the preservation of the succession of matter, for the public at large, and for determining the laws of action of the Vaccine poison, by accurate registers of observations, it is hoped it will be found, that these points have been completely, or at least in great part attained. With respect to the former of these last-mentioned objects, we have the satisfaction to report, not a week, and very often not a day has passed, without applications being made to the Institution for matter to supply great part of

of the metropolis, and still more extensively, provincial practitioners. In particular, here has been the appointed office, for supplying the navy and army, by order of government. Nor have the benefits of the Institution in this respect been confined to our own country, for France, Germany, Russia, Portugal, Italy, different parts of Asia, Africa, and America, and the West Indies, have all been furnished with matter from this source. In no instance that has come to our knowledge has our matter been followed by any other effect, than the Cow-Pock; but in a few cases, the Small Pox, from the intervening agency of that poison (although at first confounded with the Cow-Pock) has taken place. The Chicken-Pox, Measles, and ulcerous sore Throat, which sometimes occurred during the Cow-Pock, were too obvious to be imputed to the Vaccine poison.

Vaccine Institution, the appointed office for matter for the army and navy; also supplies the world in general.

With respect to the latter-mentioned object, the observation of facts to determine the laws of agency of this matter, we have made a selection, and reduced into propositions such as seemed most worthy of remark, either from importance or novelty.

Facts reduced into propositions

I. PROPOSITION.

A person by undergoing the Cow-Pock, is rendered incapable of undergoing the Small-Pox.

The proofs of this fact are taken 1st from the inefficacious inoculation of persons with variolous matter after the Cow-Pock.

2d. From the exposure of persons after the Cow-Pock to the Small-Pox, with impunity.

Proofs that persons cannot take Small-Pox after Cow-Pock.

With respect to the first kind of counter proof or test, for reasons above assigned, we cannot offer the evidence of inoculation for the Small-Pox, of all the inoculated cases of the Cow-Pock at the Institution, but near three hundred instances of such unavailing variolous inoculation, after the Cow-Pock, in our establishment, conjointly with many thousands of other instances elsewhere, without a single example of the Small-Pox being excited, in our judgment afford demonstration of the truth of the above proposition.

With

With respect to the other kind of test, the exposure and intercourse with persons ill of the Small-Pox, subsequently to the Cow-Pock, we have not received intelligence, or seen a single instance of such subsequent occurrence of that disease: and from the disposition of both the patients themselves, and others, to consider as the Small-Pox many different eruptions, it was not probable that such occurrences should have taken place without coming to our knowledge. We find in looking over our register, that in a number of instances, the Small-Pox has come on while the patient was in the Cow-Pock (i. e.) within twelve days after inoculation: such cases, however, do not belong to the fact under examination; but evidently must be referred to the head of intervening diseases hereafter to be explained.

It may be also useful to notice, that we have been alarmed two or three times with the intelligence of the Small-Pox occurring several weeks or months after our patients had undergone the Cow-Pock. We thought it our duty to visit and examine these patients, and also to enquire into their history among their attendants; and by these means we obtained the

completest satisfaction, that the pretended Small Pox was generally the Chicken-Pox. One instance was the under-related, which we have selected for illustration, because the eruptions were by their resemblance, mistaken for the Small-Pox, by the friends of the patient; and even by a medical practitioner, who accordingly gave a representation of the case, by no means advantageous to the Institution.

Chicken-Pox
after Cow-Pock,
resembling and
mistaken for
Small-Pox.

A child, ten months of age, was inoculated the 1st of April, 1800, by one puncture only. The infection took, and the pock was well characterised, by the vesicle, on the 6th day, and on the 11th, by the scabbing process beginning with an extensive areola. On the 15th day, there was the genuine Vaccine scab, which subsequently fell off, and left a cicatrix. The patient was constitutionally disordered on the 6th day, and again on the 8th; but most probably from teething. On the 8th of August following, the child returned to the Institution with above 100 eruptions of blackish scabs, and red spots, apparently the Chicken-Pox, in the scabbing state, which it was said began to appear seven days before, and came out during five days, having been preceded by a fever
three

three days previously to the eruption. Small pits were left, as was observed by one of your Reporters, some months after this eruption.

It will probably afford instruction to notice, that cases of eruption, supposed to be various, were observed subsequently to the Cow-Pock, of which the adversaries to the new inoculation availed themselves to discredit it. But however resembling, on the mere inspection, such eruptions were to the Small-Pox, the inquiry into the course and duration of them manifested a different disorder; still to remove all possible ambiguity, the *Experimentum Crucis* by inoculation of the matter of such eruptions was instituted, but unavailingly.

Other eruptions
after Cow-Pock
resembling Small
Pox.

II. PROPOSITION.

No one has died from the inoculation
of the Cow-Pock.

Of about 1200 subjects (the number inoculated up to December, 1802, as appears on our registers,) not one has died; but six to ten usually

No one died of
the inoculated
Vaccina.

In what circum-
stances very
young children
died of ulcerated
arms.

usually die of this number inoculated for the Small-Pox. Further, it is not, as far as we know, authenticated, that any person has hitherto died of the Vaccina itself, among those inoculated elsewhere. The deaths which might have been imputed to it, by uninformed persons, as in an instance or two at the Institution, were occasioned by intervening disorders, or immediately subsequent ones, hereafter to be noticed under a different head, and were not induced by inoculation.—Here however, perhaps, we ought to except a few * instances, which have been published, of deaths of very young children, apparently occasioned by ulcerations of the inoculated part. These ulcerations were in all probability produced by exposure to cold, scratching, pressure, adhering of the linen to the ruptured vesicle, or sore from the torn-off scab; together with the application of dirt, or other extraneous matter among very poor people, whose chil-

* In the Bill of Mortality of London, for 1802, two *deaths* are inserted, from the Cow-Pock: we have enquired, but in vain, for the evidence of these cases. In the year 1800, also, one death by the Cow-Pock is inserted, which was subsequently found erroneous.

dren

dren were half-starved, and half naked. It has been too commonly the practice to blame the Inoculator in these instances, by imputing the mischief to using matter from a pock older than the ninth day; and also, on equally unjustifiable grounds, to refer these bad consequences to using some other matter different from the Vaccine, or to the mode of inoculation. We have heard of no death from the ulceration or inflammation among children duly nursed.

III. PROPOSITION.

The symptoms from the local affection, or inoculated part, were in no instance more severe, and generally much less so than in the inoculated Small-Pox.

If the inoculation produced the Vaccina at all, then in about nine cases out of ten, the vesicle rose, and afterwards desiccated without any painful feelings, except a little heat of the part, stiffness and itching; and the scab which succeeded, dropt off without leaving any sore, but merely a cicatrix.

Affection of inoculated part generally less considerable than in inoculated Small Pox.

In most of the remaining or tenth cases, a little phlegmonous swelling arose in the inoculated part, about the twelfth to the fifteenth day, attended with pain for a few days; and the *vesicle* very rarely became a *pustule*, i. e. a suppuration rarely occurred.

Extensive erythema sometimes comes on.

In a few of the tenth cases, an erythema (improperly called erysipelas) attended by heat rather than pain, arose on the 10th, 11th, or 12th day, which spread to a pretty considerable extent over the arm, from the part inoculated; but by proper management, this erythema disappeared in a few days, except at the extreme borders of it, where it left a stain for a few days further, as well as a red areola around the drying vesicle.

Vesicle being torn, becomes a sore.

In a still much smaller proportion, than above asserted, of the remaining cases, the vesicle, especially on being torn, became a sore, which was sometimes attended with inflammation of the surrounding parts. This sore, in four or five instances extended, so as to occasion pain, lameness of the arm, and a discharge of a purulent or other fluid, for a week or more, but in no case did there appear dangerous symptoms.

toms. We had decisive proof that these sore arms were occasioned by scratching off the vesicle; tearing off the scab; friction by the cloaths made too strait; and by other kinds of mechanical violence. We do not, however, mean to allege, that in no instance do such sore arms occur independent of mechanical injury, from the irritation of the Vaccine vesicle or scab itself; for in truth, we have seen such cases in private practice, particularly in scrofulous patients.

Sore arms occur sometimes independent of mechanical irritation, from peculiarity of constitution.

IV. PROPOSITION.

In nineteen out of twenty inoculated cases, the rise, growth, and termination of the Cow-Pock was uniform (provided the mode of inoculation was alike) except the variation of the size.

It will suffice, in this place, to take notice of a few phænomena only under that head.

1st. The red areola, during the beginning and early part of the scabbing process, generally

Red Areola not
necessary to the
Cow-Pock,
which destroys
the susceptibility
to the Small-
Pox.

rally took place, but when it was absent, in other respects, the pock was the usual one; and the susceptibility of the Small-Pox was equally destroyed as when the most extensive erythema appeared on the inoculated part.

2d. The figure of the pock was always circular when the inoculation was by puncture, and often oblong, or oval, when by a scratch.

3d. In no case did the pock appear with ragged edges and little surrounding eruptions after the tenth day, as in the Small-Pox.

Properties of the
Vaccine-Pock.

4th. The diameter of the circular pock was usually about two to three tenths of an inch, but sometimes it was to the extent of six tenths; and, on the contrary, sometimes it did not exceed one tenth. However, in these latter cases of a very small vesicle, provided it was of the usual duration with the usual scab, and left a permanent cicatrix, the susceptibility of the Small-Pox was equally destroyed as by the largest pock.

5th. In

5th. In about one case in two or three hundred only did the vesicle suppurate, or become a pustule.

In one case out of three hundred only was the Vaccine-Pock a pustule

6th. In some cases, a large pimple, or gnat-bite-like eruption only was excited, but permanent for the usual time, yet, on re-inoculation with the Vaccine and variolous matter, the susceptibility of the Small-Pox appeared to have been destroyed.

7th. By scratching, the common appearance of the Vaccine-Pock was altered, but the effect of unsusceptibility of the Small-Pox was produced.

8th. In some cases, the progress of the affection was so slow, that the pock on the eighth day had the common appearance of that of the fourth, and that of the sixteenth was like the usual one on the eighth or tenth. We have been shewn a case in which no signs appeared of the infection having taken place for five weeks; but in six days, after a second inoculation, a pock appeared, and alike from both inoculations.

Anomalous Vaccine-Pocks produced incapability of taking the Small-Pox.

9th. In two or three rare instances, an irregular figured pock, followed by a yellow rough large irregular figured scab, was produced on repeated inoculation; yet the subject could not take the Small-Pox subsequently.

10th. In one case, a large mulberry-like pock only was excited, yet the susceptibility of the Small-Pox was destroyed by it.

In what cases the eruption does not destroy the susceptibility to the Small-Pox.

11th. In no case was the susceptibility of the Cow-Pock, and of course of the Small-Pox, destroyed, when the pimple or pock excited, disappeared within ten or twelve days, although the inflammation was seen on the day after Inoculation, and when also no cicatrix was left behind.

Areola not necessary, not connected with fever.

12th. The areola is neither essential in the same, nor different constitutions; nor connected with the fever; nor with the age of the matter; nor with the quantity of it; nor with the mode of Inoculation; but with apparently the state of the skin, in even different arms of the same person: for in the same person, one arm had borne a pock with a large red areola, and the other had a pock with none at all; some have had

no areola, and yet a fever; and others no observable fever, yet there was a considerable areola.

13th. The puncturing simply the vesicle for matter, neither altered the form of the vesicle and scab, nor excited fever and inflammation.

14th. In some cases, the intervening disorders, especially those attended with a rash, impeded the progress of the vesicle, but in general no alteration was thereby occasioned.

15th. A phlegmonous tumor, with hardness on the arm inoculated, occurred in two or three instances, but was subdued in a few days.

16th. The few instances of sore arms after the usual period for scabbing, and falling off of the scab, seemed to depend on the scrofula; in other cases, on external injuries; or on unknown peculiarities of constitution.

17th. In no case has it appeared that a person is secure against the Small-Pox, unless a cicatrix has been left by inoculation with Vaccine matter; but, although the case is rare, there may have been a cicatrix produced by an eruption,

Cicatrix necessary, but may be produced without destroying the susceptibility to Small-Pox.

tion, which has not destroyed the susceptibility of the Small-Pox.

V. PROPOSITION.

In the greater part of the cases, there was no observable constitutional or febrile affection; and when it was observed, the symptoms were in nine cases out of ten less severe, and of shorter duration than in the inoculated Small-Pox.

Nine-tenths of patients between six weeks and five years of age.

About four-tenths only of the patients were constitutionally affected, and many of these from intervening disorders.

Nine-tenths of our patients were between six weeks and five years of age; the oldest was fifty-six. Our registers inform us that about 4-tenths of the whole of the patients were disordered by a febrile affection during the Cow-Pock. But here we must distinguish those so affected by the Cow-Pock, from those affected from intervening disorders independent of the Cow-Pock, viz. chiefly from dentition and bowel complaints, attended in many instances by eruptions, called the *red-gum*, *tooth rash*, *common rash*, and *nettle rash*. In these latter cases, which

which may be esteemed to be 1-fourth of the 4-tenths of the constitutional disorders above stated, the disorder began as early as the fourth day of inoculation, and occurred on any subsequent day during the Cow-Pock, but was most frequently observed on the 6th, 7th, and 8th days. The constitutional affection which was justly imputable to the inoculation, occurred almost always on the 9th and 10th days; but in a very few instances, perhaps also on the 8th and 11th; except indeed the growth of the Vaccine vesicle was unusually slow, in which case, sometimes it rose to the common state of fullness exhibited on the 9th, not till the 11th, or even not till the 15th day; where such cases occurred, the febrile affection was proportionally late.

Specific Vaccine constitutional affection occurred on the ninth and tenth days generally.

The duration of the above-named intervening disorders varied from a day to the whole period of the Cow-Pock; but the specific Vaccine constitutional affection lasted seldom longer than one day.

Some instances occurred in which the two kinds of constitutional disorders succeeded one another in the same person; and probably in

in other instances they occurred even on the same days. In the same subject, during the Cow-Pock, the intervening constitutional affections may occur more than once. We think that these intervening constitutional disorders have hitherto been generally confounded with the specific Vaccine one, except those from Small-Pox, and Measles,

Symptoms of
the specific Vaccine
and unconstititutional disorder.

The symptoms of the specific Vaccine fever were usually, head-ach, paleness, depression of strength, listlessness, sometimes drowsiness, alternate coldness of the skin, and general heat with flushings, aversion from food, nausea, now and then vomiting, and, in a few instances, epileptic fits and delirium. In many cases, pain in the axilla of the side inoculated, or of the shoulder, occurred, and sometimes swelling of the axillary glands. With these symptoms, there was always more or less accelerated circulation, but very rarely whiteness of the tongue or thirst. One, or at most two days confinement were occasioned by the Vaccine fever. On the 2d or 3d day after this fever, in a very small proportion of cases, eruptions appeared, seldom exceeding twenty, which were either hard pimples, not unlike Small-Pox,

Small-Pox, but scarcely with any fluid in them, and which disappeared in a few days: sometimes however they contained a watery fluid, like Chicken-Pox, yet did not suppurate, and these became small scabs in a few days.

Eruption excited
by Vaccine
fever.

1. An eruption of this kind occurred (as late as the 20th day) which dried on the 28th.

2. In the summer season, especially in August, a rash very often broke out on the 10th or 11th day, alleviating the specific fever, but exciting much general irritation.

3. Another kind of eruption, we were rather told of than saw, was small maculæ, like the measles, or those of the scarlatina anginosa.

Various kinds of
eruptions super-
vening during
the inoculated
Vaccina.

4. A common rash has appeared on the 9th day, with great inflammation of the inoculated part, and great discharge; and a second eruption on the 17th day, like millet feeds, without fever.

5. A kind of eruption now and then occurred in hot weather, five to ten days after the

Effera Vaccina,

Effera Vaccina
a peculiar rash.

period of the Vaccine fever, which was a very irritating rash, of the urticaria kind. This we venture to designate by the title of *Effera Vaccina*. In a few instances the itching from it was hardly tolerable.

Eruptions from
rubbing patients
with Vaccine
pock matter.

Sometimes, two kinds of eruptions at once took place, or succeeded one another. In one case, a watery eruption occurred on the 23d day. In a few cases, eruptions were produced of various figures, particularly on the face, from the rubbing of the matter of the pock on these parts of the patient.

VI. PROPOSITION.

A disease from various morbid poisons may occur at any period between the time of the Vaccine Inoculation, and the time of the Vaccine constitutional affection; whether that affection be observable or not.

1st. The SMALL-POX from variolous effluvia, i. e. the *casual Small-Pox*, may intervene, and if the eruption occurs any time between the 9th and the 13th or 14th day, the Cow-Pock will go on seemingly regularly through all the stages, as well as the Small-Pox; but unless the Small-Pox break out sooner than the 12th day from the Inoculation of the Cow-Pock, we have observed a constitutional affection from one of the two kinds of matter only, and probably that from the Small-Pox; and it appears that it may occur on any day between the 5th or 6th, and 12th. In the case of J. Emerson, February, 1800, the constitutional affection occurred on the 4th day of the Vaccine Inoculation, and the variolous eruption on the 8th; but although the Cow-Pock advanced in the usual way till the 6th or 7th day, it then receded, or rather became stationary for six or seven days, instead of scabbing. Of course, as actually happened, when the Small-Pox broke out still sooner than the 9th day, we constantly saw the Cow-Pock vesicle, or even pimple, to become first stationary, and next to recede or to commence the scabbing stage. Hence, if the Small-Pox break out within two or three days after Vaccine Inoculation, there

Casual Small-Pox may intervene and proceed with the Cow-Pock, if the variolous eruptions occur between the 9th, and 13th or 14th day.

If variolous eruptions before the 9th day after Vaccine Inoculation observed Cow-Pock, to become stationary, and recede or scab.

may be no effect visible on the part inoculated. The intervening cases are proved to be the Small-Pox. 1st. By the figure, matter, course, and duration of the eruptions.—2d. By the matter of them producing, by Inoculation, the Small-Pox.

Axiom that two different diseases cannot take place at the same time, occasion of error.

The supposed established axiom that two diseases could not exist in the same parts, has been one reason for these eruptions having been believed to arise from the Vaccine matter, occasionally degenerating into the Small-Pox, and therefore producing Small-Pox-like eruptions; and that such eruptions could not arise from variolous matter, acting at the same time with Vaccine matter. Hence also, some persons, for a certain time, were even inclined to believe, that in these cases, a hybrid disease from the joint agency of the Vaccine and variolous infections, was produced.

Cases to this point, are No. 735, William Norris, April 20th.—Elizabeth Hart, July 25th, 1800.—No. 537.—No. 245, J. Emerson.—No. 5.—See Institution Register Sheets.

But we select as an instance, the following case for illustration, because it has been published,

lished, although inaccurately, on affidavit in the Morning Advertiser, for February 5th last, to injure the credit of the new Inoculation in general, and as an imputation on the Vaccine Institution in particular.

No. 1093, Frederick Estoff, seven months old, inoculated Tuesday, October 26th, 1802. Case published on affidavit.

Oct. 29. Friday, 4th day—did not attend.

Nov. 2. Tuesday, 8th day—had been ill of, perhaps, a febrile complaint, on 4th and 5th day after Inoculation, but now well. Infection has produced Vaccine Pock in each arm, with the usual appearances.

Nov. 5. Friday, 11th day—did not attend.

Nov. 9. Tuesday, 15th day—Vaccine-Pock on each arm, in the usual state, as on the 9th and 10th day, instead of the scab, common on the 15th day.

Was seized with febrile complaints on Thursday, 10th day, and eruptions broke out on Friday the 11th day, which appear to be the Small-Pox.—On enquiry

quiry it was found, that the Small-Pox had been in the house of the patient for a week previously to the Inoculation; in which one child had died. After this time, the patient never attended.

Hence it is fair to conclude, that the variolous infection had been admitted into the constitution, in all likelihood before the time of Inoculation, so as to excite the variolous fever, as stated, in nine days, but most probably, in reality, in seven or eight days; and the eruption in ten or eleven days after the Vaccine Inoculation.

Variolous and
Vaccine matter
inoculated nearly
at the same time,
produce both
Small-Pox and
Cow-Pock.

In this place it seems relative to observe, that by inoculating the Vaccine and the variolous matter in the same Subject, but on different parts, on the same day, or within twenty-four hours after one another, if both infections take, the Small-Pox and Cow-Pock will be excited, and go on together; there being a constitutional affection from the Inoculation but once, and at the usual time of both diseases. In one of these experiments, the Small-Pox appeared only in the part inoculated, no eruptions appearing elsewhere.

If

If the Small-Pox matter had been inoculated two days or more after the Vaccine, there was either only a Small-Pock in the part inoculated with variolous matter, which desiccated without suppurating, or no effect than a pimple was produced by it. But the very reverse happened when the Vaccine Inoculation was performed two days or later than the variolous. In no case has the Small-Pox, by Inoculation, been arrested in its progress, and superseded by inoculating for the Cow-Pock, two days or later after the Vaccine Inoculation.

Effects of variolous and Vaccine matter inoculated two days or a greater distance from each other.

Extensive and valid evidence has been afforded, especially in the Small-Pox Hospital, that the casual Small-Pox, conjoined with the Cow-Pock, is either mitigated, or not attended with more danger, and more severe symptoms than the inoculated Small-Pox simply, or without any conjoined disease.

Casual Small-Pox mitigated, by conjunction with the Vaccine.

It does not appear to have been understood till after a good deal of experience in 1799 and 1800, that the Vaccine and variolous poisons can operate in the same economy at the same time, (apparently locally) till the constitutional effect of either of them is produced; then

Variolous eruptions in the Vaccine practice of 1799, and 1800 accounted for.

Instance of distinct constitutional affection from both Vaccina and variola in same person.

then, if the agency of the two poisons be nearly contemporary, the eruptions of the two diseases will proceed, as if singly existing; but if either the Vaccine or variolous matter commenced its action several days earlier than the other, the progress of the local affection, from the matter latest in action, is stopped on the taking place of the constitutional disorder, and gradually recedes. In short, until the constitutional affection has been excited, the two poisons will act locally at the same time. When the variolous poison was introduced by effluvia in the casual way, previously or subsequently to the Vaccine Inoculation, there has been, in one instance,* a constitutional disorder on the 8th day, and again on the 12th day, with variolous eruptions on the 13th day, in which case, the Vaccine Pock was quite regular in its progress. Hence it seems, that if both the Vaccine and variolous infection have been applied at certain different periods, and have made a due progress before the constitutional disorder is excited by either of them, that latest applied will still produce a pock, which will go through its respective stages, and even

* Case by Mr. Malim.

perhaps, excite its specific constitutional affection, as well as the first applied matter, which produces its specific pock, and constitutional affection. From this representation it will readily be conceived, that the cases of coincidence of variolous-like eruptions during the Vaccina in the year 1799 and 1800 (the two first years of the Vaccine practice) could not be satisfactorily explained by even those best informed on the subject of Vaccination. And it appears that it was unjustifiable to impute such cases to the matter employed by the Inoculators.

Inoculators unjustly censured in 1799 & 1800, for matter employed.

2. CHICKEN-POX intervening. Cases have occurred of Chicken-Pox not only at all times during the Cow-Pock, but immediately after the scabbing process; as well as subsequently at a much later period. In this last respect of the Chicken-Pox after the formation of the scab, or at a later period of the Cow-Pock, there is a difference between the Chicken-Pox and Small Pox. No difference was observed in the stages of the Cow-Pock, or of the Chicken-Pox, when the two diseases went on together; except that the Cow Pock was sometimes a little retarded in scabbing. In these instances

Chicken-Pox occurring during Vaccina, at any period, as well as after the Vaccina.

instances there may be a constitutional affection from each of the diseases on different days, or they may occur together. In one case, the Chicken-Pox and Vaccine-Pock were inoculated on the same subject, and both went on as usual, distinctly.

Measles intervene at any period during the Vaccina, as well as supervene afterwards.

3. MEASLES have intervened during the Cow-Pock, and may occur at any period of the Vaccina as well as subsequently. Here also the two diseases seemed not to affect one another, but in retarding as just mentioned; except in one case, in which the inoculated Vaccine matter produced a large pimple with much inflammation, and afterwards, subsequent to the Measles, the distinct Vaccina took place on a second Inoculation.

Ulcerous Sore Throat during Vaccina proved fatal.

4th. ULCEROUS SORE THROAT intervenes. One case of Ulcerous Sore Throat occurred in a child eighteen months of age. It went through this disease, during the Vaccina, without the two diseases influencing one another: but, in another case, during very hot weather, the temperature of the air being 75° to 80° in July and August, 1800, Scarlet Fever, like Measles, with Sore Throat, broke out on the twelfth day after Inoculation, and proved fatal

fatal on the sixteenth, the Vaccina having the usual appearances.

Various other eruptions, both chronic and acute, occur during the Vaccina, but, as we do not know that they arise from specific morbid matter, we do not describe them in this place.

Various other eruptions during Vaccina.

The *Hooping Cough* has occurred during, as well as soon after the Vaccina; and the progress and symptoms of both diseases were the usual ones separately.

Hooping Cough during Vaccina.

VII. PROPOSITION.

As far as known, any disorder whatever may take place at any period of the Vaccina, except, after a certain progress, the Variola.

Among these, especially in children, besides those already noticed are, the *Red Gum*, the *Tooth Rash*, the *Thrush*, Disorders from Irritation by *Dentition*, from *Acid*, or other Matter in the *Stomach*, from the same Matter in the *Bowels*, from

various disorders producing Epileptic Fits; and, in all ages, Pulmonic Inflammation, Catarrhs, Coughs, &c.

Singular that disorders which prove fatal singly do not do so conjoined with the Vaccina.

As many of these disorders are attended by alarming symptoms, and are often fatal, it is rather surprising such deaths have not fallen under our observation. Even the Vaccina seems only to have been sometimes impeded in the progress of the vesicle; and, perhaps, the presence of these and other disorders, at the time of Inoculation, may occasion the Vaccine matter to fail in taking effect so long as they are present, if not to prevent its operation altogether.

Curious instance of Influenza retarding the Vaccina at least nine days.

A curious instance of an intervening disease impeding the course of the Vaccina, fell under one of your Reporter's observation, while these sheets were printing. Elizabeth Bradley, aged seven months, No. 1221, in Dr. Pearson's register sheet at the Institution, was inoculated by one puncture in each arm, on Tuesday, the 1st of March. The child was unwell, probably, in the Influenza, from this time to the 8th, when the vesicle of each arm being small and indistinct, the Inoculation was re-instituted by one puncture

puncture in each arm. After this day, the Influenza symptoms were so severe for a whole week, that the case was expected to terminate fatally, and the child could not be brought to the Institution 'till Friday the 18th of March; at which time a fine distinct vesicle, like the usual one on the eleventh day, appeared on each arm from the first Inoculation, and an equally distinct one, but about one-fourth the size and like the eleventh day ones in general, appeared on each arm from the second Inoculation: both vesicles on each arm being so near to one another as to be included within a common areola. Matter was taken from each of these vesicles for Inoculation, and each produced the Vaccina.

No doubt the intervention of the Influenza had retarded the Vaccina; for other subjects inoculated on the 1st of March, with the same matter, and again, on the 8th, had pocks, on the 18th of March, dried into the characteristic Vaccine scabs as might be expected, it being the nineteenth day from the first Inoculation, and the eleventh from the second.

In

Influenza, Epilepsy, Peripneumonia, &c. intervening during Vaccine Inoculation.

In one child, EPILEPTIC FITS came on with the fever on the ninth day; the gums were much inflamed, and it cut, about that time, two teeth. In other cases, similar fits, probably from dentition, occurred on the fourth, fifth and sixth days. In another case, they occurred on the second day, and again on the eighth. A peripneumonia supervened on the sixth day after Inoculation, in a dragoon of Sir Wm. Lee's regiment; but the only variation in the Vaccine-Pock seemed to be its being later than usual and smaller.

VIII. PROPOSITION.

A person, in seemingly perfect health, may have the Vaccina very severely under every known advantage of treatment; and, in many chronical diseases, a person will apparently go through the disorder distinctly and with as slight complaints as one in perfect health.

Chronic diseases at the time of Inoculation, no effect on the disease.

Persons having a variety of leprous and other cutaneous affections; Scrofula, and other glandular

glandular complaints; Rheumatisms; Rickets; Mesenteric Consumption; Chronic Coughs; Diarrhœa; Itch, &c. have gone through the Vaccina in the usual manner.

In a child emaciated and in fits daily, being Hectic also, the Cow-Pock went on as usual without making it either better or worse. A greater number, however, of anomalies in the Vaccina, or irregular cases, occurred in those who laboured under Scrofula and Rickets, than in healthy subjects. In those who had the Pfora, an intolerable itching occasioned scratching, by which the Vaccine matter seemed to be inserted into the ruptured places, and occasioned troublesome fores.

Itch with Vaccina occasion troublesome fores.

IX. PROPOSITION.

The animal œconomy, for the most part, does not seem to be either bettered or injured by going through the Vaccina.

This was generally the case: however, there were exceptions—

1st. Swelling

1st. Swelling of the axillary glands, in one or two instances, remained from the Inoculation, which suppurated and discharged in three or four months a great quantity of pus.

Disorders succeeding Vaccine Inoculation, especially eruptions.

2d. In Children previously not subject to eruptions, they appeared from time to time for a year or more afterwards, not unlike gnat-bites, or little vesicles, but otherwise there was perfect health.

3d. In the second, third, and fourth week after Inoculation, an eruption now and then occurred of various kinds of pimples.

4th. In one or two cases, some months after the Cow-Pock, an eruption broke out not unlike the Small-Pox in some stages; and which was considered to be that disease by persons not of the profession.

Better and worse health after Inoculation.

Some have enjoyed better health after the Vaccina than before, and even got cured of some former complaint. On the contrary, now and then the subject enjoyed bad health subsequently; but, in both cases, that these consequences arose from the Vaccina was equivocal.

X. PROPOSITION.

Persons who have already gone through the Vaccina, are unfusceptible of it a second time.

This fact was ascertained in different ways.

1st. By re-inoculating, in many instances, patients, in whom it was supposed the first Inoculation had failed, on the 4th, 5th, and 8th subsequent days to the first Inoculation; but in which the first applied matter had only in reality been more slow than usual in operating; so that it excited the distinct Vaccine-Pock with constitutional disorder, on the 9th or 10th days, and the Inoculation of the 4th day produced a similar pock to the first Inoculation, in the same time, or nearly so; except that these latter pocks were often smaller, but no constitutional disorder was produced by them. And the matter inoculated on the 8th day, or later than the first Inoculation, produced nothing but a phlegmonous pimple; sometimes becoming a pustule, quite unlike

Three different kinds of proof that persons who have undergone the Vaccina cannot undergo it a second time.

the Cow-Pock: and frequently no inflammation or pimple was produced at all. In this last particular, our experience does not agree with Mr. Bryce's. Here, however, we must except the instances of unusually slow progress, or suspended march of the pock by the first inoculation, from intervening disorders, or from peculiarity of constitution; for if e. g. the pock of the 19th day be in the usual state as that of the 11th or 12th, the pock from the second Inoculation, eight days later, may be a well characterized Vaccine one, only smaller; and in the same state otherwise as the 19th day pock.

2d. Persons having anomalous figured Vaccine-Pocks were re-inoculated, for obtaining satisfactory proof, but no fresh pock was excited.

One of the Reporters, as early as August, 1799, on the ground of this fact, proposed re-inoculation, as a security in doubtful cases: and in the printed directions by the Institution, January, 1801, it is recommended to re-inoculate the Vaccine matter, as a test of the patients

patients having had the Cow-Pock in doubtful cases.

3d. Persons known to have had the Cow-Pock some years before, were re-inoculated, without effect, or at most a pock was produced, unlike the Cow-Pock in its progress and duration, and affording a different kind of scab, and no cicatrix. Hence we feel justifiable in asserting, that the contravening evidence on this point ought to be considered, either *first*, as instances of eruptions, in reality *not Vaccine*, either on the first, or on the subsequent inoculation; or *secondly*, if Vaccine, they stand on the same ground as those of the Small-Pox, asserted to have taken place more than once in the same constitution.

XI. PROPOSITION.

Persons who have undergone the Small-Pox cannot be infected so as to produce the Cow-Pock.

This fact has been determined by two means.

Proofs that the human animal cannot undergo the Cow-Pock after the Small-Pox.

1st. Many persons who had only doubtful, or no evidence, of their having had the Small-Pox, in order to be secured, were again and again inoculated for the Vaccina, without being able to excite it; but sometimes a large pimple was produced, which filled with serum or pus; and these local affections have been called by inexperienced practitioners, the Cow-Pock.

2d. Some persons, either from accident or curiosity, who were marked indubitably from the Small-Pox, were inoculated for the Cow-Pock, several times, but unavailingly, except the local inflammation first mentioned.

Hence also, the experience at the Institution has confirmed the assertion of one of your Reporters,

Reporters, on this point, as early as August, 1799.

XII. PROPOSITION.

No difference could be perceived in the agency of the Vaccine matter according to the age of the pock; or to the presence or absence of Areola; except in certain early ages of it, being more efficacious than others.

It was the usage of the Institution almost always to inoculate with matter of the 8th, or 11th and 12th days; and from our ample experience we affirm, that if the pock of the 11th or 12th day was not yet in the scabbing stage, or was but just beginning, the matter was equally efficacious with that of the 8th day; yet, if the pock had begun to scab, or was advanced to that state, this old matter oftener failed than younger matter: but when the matter of such old pocks failed to excite the Vaccina, considerable inflammation, or phlegmonous eruption or pimple (which is improperly called
Early matter more efficacious, but not less liable to produce great inflammation than old matter.
spurious

spurious Cow-Pock) did not more frequently occur than from younger matter of the distinct Cow-Pock, when it failed; and the bad consequences did not ensue more frequently from such old matter, than from matter of the 8th day, or earlier.

No difference in effect of matter according to presence of areola.

Whether the matter was taken from a pock which had an areola or not, the effect was not on that account different. We have used matter, when it could be had, as early as the 5th day, but it excited the *Vaccina* with the usual appearances; and certainly it was not on account of the age of the matter more mild.

Matter of 15th day, and even pus, when they took effect, produced the genuine *Vaccina*.

Matter from a pock still containing lymph, though as late as the fifteenth day; and even pus when the *vesicle* had become a *pustule* generally produced no effect at all except like that of a common scratch; but sometimes it took effect, and then it produced the genuine distinct *Vaccina*.

8th and 15th day matter in the same Subject produced the same kind of pocks.

In the same arms, matter of the 8th day and of the 12th has been employed, and the event was, that each sort excited the genuine and similar *Vaccine Pocks*; and the same effects were

were seen from matter, so inoculated, of the 11th and 15th days.

XIII. PROPOSITION.

The specific constitutional disorder, usual on the ninth and tenth days, was not in proportion to the number of Vaccine pocks, nor of the inflammation in the arms.

A smart fever was as frequently excited when there was only one pock, as when there were several; and as often there was no constitutional disorder observed when there were four or even six pocks, as when there was only one; also when there was a good deal of red areola or inflammation of the parts surrounding the pocks, the fever was not more frequently present than when there was none. Hence the proposed advantages from using applications to diminish inflammation of the arm, do not seem to have been founded on experience.

Specific constitutional affection not as the degree of inflammation, or the number of pocks.

No foundation in experience from the applications to remove inflammation.

XIV. PROPOSITION.

No difference was observed in the kind of pock, according to the quantity of matter inoculated.

How to inoculate hundreds or scores with the matter of a single pock.

The matter of a single pock being mixed with one quarter of an ounce measure of warm water, such diluted matter excited as distinct a Vaccine-Pock by Inoculation, as an equal quantity of undiluted matter. A pock so excited, was not attended with less inflammation or constitutional affection, than that excited by a larger quantity of undiluted matter. But this fact shews an easy method of inoculating several hundred, or at least scores of persons from a single Vaccine-Pock; a great convenience, when the poor of perhaps several parishes are to be inoculated at the same time.

XV. PRO-

XV. PROPOSITION.

Matter dried on glafs, or on other fubftances, failed to produce the Vaccina much oftener than when ufed immediately from the Subject; and it certainly failed when diluted with boiling hot water: but the Inoculation of dried matter was as little liable to produce inflamed arms as recent matter.

Why dried and heated matter fo often fails.

The failures may be imputed to the evaporation of the infectious matter in the fluid of the Vaccine-Pock, in drying; and to the coagulation by hot water producing a new compofition.

XVI. PROPOSITION.

The Vaccine matter does not alter in efficacy, by paffing from human creature to human creature, for four whole years.

This Institution
furnishes the
evidence of the
permanency of
the efficacy of
Vaccina for the
longest space of
time.

The matter used at the Institution has been almost entirely that furnished by one of the Reporters,* which he took from Mr. Willan's cows, in Mary-le-bone-fields, in February, 1799. We have also used matter from the Milanese cows, furnished by Dr. Sacco, and a little from other sources, but no difference has been perceived in the effect. We believe this Institution, and the Small-Pox Hospital, are the only evidences of the permanency of the efficaciousness of Vaccine matter, for so long a space of time.

XVII. PROPOSITION.

Vaccine and variolous matter taken from a Subject, having at the same time the Small-Pox, and Cow-Pock by Inoculation, produced the genuine distinct Vaccina and Small-Pox.

Variolous and
Vaccine matter
from the same
person at the
same time pro-
duced the Small-
Pox and Cow-
Pock distinctly
in other subjects.

Such opportunities of getting both kinds of matter offered when a patient had been inoculated nearly at the same time for the Small-

* Dr. Pearson,

Pox, as well as the Cow-pock ; if both diseases were produced : also when the Small-Pox came on casually during the Vaccina.

XVIII. PROPOSITION.

The Vaccina does not vary according to the constitution of the Subject from which the matter is taken.

1st. Because the Cow-Pock, with attending eruptions, was excited by matter from a person who had no such eruptions ; and *vice versa*.

2d. Some quite healthy children afforded matter which excited a severe disease in others ; and *vice versa*.

3d. The matter from adults produced in infants as slight and distinct an affection as that from infants ; and *vice versa*.

Vaccina not varied by the constitution from which the matter was taken.

If the Vaccina, with similar peculiar characters according to the variety from which the matter be taken could be propagated analogous

to the propagation of animals and vegetables upon the principle of the selection of *sorts*, such a continuation according to the variety would have been seen in our practice; but, on the contrary, the frequent instances of difference of characters in the offspring from the parent, figuratively speaking, demonstrated the *fact* to be otherwise.

XIX. PROPOSITION.

The different seasons and weather were not observed to influence the Vaccina.

Seasons and weather very little influence.

We ought here to except that in the hot months of July and August, a Rash more frequently attended the constitutional disorder on the ninth and tenth days. In extremely cold weather, we also remarked, that the vesicle was smaller, slower in its progress, and attended by less inflammation than in warm weather.

XX. PROPOSITION.

The different kinds of food and drink did not seem to influence the disorder from the Vaccine Inoculation.

It may be taken for granted, that among the great number of children at the breast who were inoculated, the milk must have been of very different properties from the intemperate living of some, and the abstemious living of others; yet neither these differences of food and drink, nor different modes of life, were observed to influence the inoculated disorder.

No observable
difference from
the mode of living.

XXI. PROPOSITION.

Some persons cannot be infected, although the Inoculation be instituted repeatedly under the most advantageously known circumstances.

About five Subjects, all adults, of this description fell under observation; whether this

What proportion
permanently
unsusceptible
of the Vaccine.

unsuf-

insusceptibility was not in some of these cases to be imputed to the patients having undergone the Small-Pox, although unknown to themselves is doubtful; but it seems certain that a part of them must be referred, either to the original excitability of the constitution, or other agents than the Small-Pox in the course of life.

What proportion
unsusceptible of
the Vaccina.

Under this head, we mean to include those cases in which either no kind of pimple, or eruption whatever, can be produced by the Inoculation of either Vaccine or variolous matter; or merely a phlegmonous kind of pimple, neither in characters nor progress and duration resembling either Vaccine or Small-Pox, and which was liable to be excited any number of times by repeated Inoculation. It appears from our experience warrantable to assert, that such a state of original incapability does not exist in more than *one* of five hundred persons.

A much greater proportion of failures, than above stated, occurred at the Institution from the first Inoculation, but the disease was excited by repeating the operation. These failures in some instances, it was reasonable to impute
to

to certain known counteracting agents and circumstances; but in others the reason of them was not discoverable. Persons incapable of the Cow-Pock are equally so of the Small-Pox; and *vice versa*.

Indisposition and disposition in the same person alike to the Vaccina and Variola.

As far as can be perceived, the disposition, to be affected by the Vaccine and variolous matter, is alike in the same person.

XXII. PROPOSITION.

The characters of the inoculated Vaccine-Pock are in general peculiar; so that the incapability of the Small-Pox from it may be equally confided in, as after the ordinary inoculated or casual Small-Pox: but, in a certain proportion of cases, the properties of the pock or eruption by the Vaccine Inoculation, are so different from the ordinary distinguishing ones, that the repetition of the Inoculation can alone determine whether the

the incapability of the Small-Pox be produced or not.

Essential characters of the Vaccina.

Vaccine scab explained to be an *anthrax*.

In 449 out of 500 inoculated cases of Vaccina, many properties of the Cow-Pock are uniform, there being, *first*, the appearance of a small red pimple, in three to six days after Inoculation; *secondly*, the gradual growth of it to the state of a circular, or oval well defined vesicle, by the ninth to the eleventh day, of from 2 tenths to 6 tenths of an inch in diameter, and often surrounded by an erythematous areola, and attended by pain of the axilla, or shoulder: *thirdly*, the gradual change of the vesicle into a black or dark red, hard, glossy, prominent, round, firmly adhering scab, by the fifteenth to the eighteenth day: which, in a week or ten days further, falls off, leaving a cicatrix for life. This scab, which is not similar to that produced by any other affection, is a real *anthrax*, or small carbuncle; from a part killed by the inflammation excited by the Vaccine poison. The red areola or erythema, is from the irritation of the dying or dead skin; and the cicatrix is from the sloughing off of the dead part, leaving a cavity never afterwards entirely filled up.

Whether

Whether the symptoms be observable or not, a change in the whole economy is produced by the Vaccine-Pock vesicle, generally on the ninth or tenth day; and hence the capability is immediately for ever destroyed, of taking either the Small-Pox, or the Cow-Pock.

Constitution always affected whether observably so or not.

The phænomena, above related, are unequivocal of the Vaccina; but it may in reality take place so as to destroy the susceptibility of the Small-Pox, after being attended by an eruption or pock not at all like the usual peculiar one, but resembling various others; yet, in all cases, subsisting for two weeks or more, and leaving a cicatrix. That such anomalies are really the Vaccina can only be determined by re-instituting the Vaccine Inoculation, so as either to produce the regular unequivocal Vaccina, or nothing but what is excited in persons who have undergone it or the Small-Pox: and if a further proof be exacted, by inoculating for the Small-Pox.

Characters of Vaccina not always distinguishable.

That many persons inoculated for the Cow-Pock, in the years 1799 and 1800, and even in 1801 and 1802, have already, and may hereafter take the Small-Pox, is a reasonable expectation,

peftation, from the characteristic properties of the Vaccina not being known to the Inoculators by their own experience, nor from the descriptions of authors.

It is to be expected that many persons inoculated for Vaccina will and have taken the Small-Pox, and died.

The distressing information was lately given of two children in one family, taking the Small-Pox casually, of which they died; although they were supposed to be in security by having been inoculated for the Cow-Pock two years before. One of your Reporters, Dr. Pearson not very long ago, visited a patient in the casual Small-Pox, who had been inoculated for the Cow-Pock three years before. In ten days the eruption of the inoculated part became a brown scab, then falling off, and leaving a superficial cicatrix.

XXIII. PROPOSITION.

If a person in the Cow-Pock be inoculated with the MATTER OF HIS OWN VACCINE VESICLE, at any period in which it can produce the disease in other Subjects,

Subjects, it will commonly excite irregular or imperfect Vaccine vesicles; but although to the number of six or seven successive Inoculations there will be no fever a second time, and corresponding to the subsequent Inoculations; nor will the vesicle from the first Inoculation be varied by such repeated Inoculation.

This proposition is proved by, *first*, the scratching, or otherwise bursting of the Vaccine vesicle, by which the matter of it becomes applied to the adjoining scratched parts; in which circumstance it is not unusual to see several vesicles surrounding the inoculated part. Secondly, we have several times inoculated purposely the matter of the vesicle of the sixth to the eleventh day, in the Subject of such vesicle, which produced the effects stated in the above *Proposition*.

ADDITIONAL OBSERVATIONS

SINCE

THE READING OF THE PRECEDING SHEETS,

AT THE

GENERAL MEETING.

Page 21, l. 11.—IN the instance of the death of a child, as related by Mr. Morrison of Chelsea, it seems to have been occasioned by an intervening disease independent of the Inoculation. See *Medical and Chirurgical Review*, vol. ix. p. 389. 1802.

P. 23, l. 11.—How different this from the French critique on Colon, in the *Moniteur Universel*, No. 28, an. 9 de la Republique. “Il est à ma connaissance que des enfans ont péri pour avoir été Inoculés de la Vaccine dans des instans d’eruptions cutanées, ou dans un état de maladie inflammatoire.

P. 24,

P. 24, l. 7.—Sometimes in one arm inoculated, there was an extensive areola, and in the other none, on the same Subject.

Ibid.—In one arm, the vesicle on the eleventh day was four times larger than that of the other, but commonly the smaller appeared much later than the other. See *Register*, No. 553. In one arm a regular Vaccine vesicle appeared, and in the other, an anomalous one, or even a pustule instead of a vesicle.

P. 25.—In a few instances of Inoculation in each arm, the infection seemed to take and go on in one arm only in the usual way to the eighth day; and then the other arm came forward, but the vesicle was much smaller, like the fourth day, and the constitutional affection was on the ninth day. In such cases, on the twelfth day one vesicle was scabbing; and the other was like that of the eighth, viz. not at all in the scabbing state; but in general the vesicle of the second Inoculation on the fourth day was the same in appearance as that of the first on the ninth or tenth days.

Ibid.

Ibid.—In one instance the Inoculation having apparently failed on the 11th day, it was then instituted a *second* time, and a *third* time on the fifteenth day; but by the twenty-fourth day the vesicles of the three Inoculations seemed alike, and as usually on the eleventh day. The febrile affection was on the eleventh day after the *third* Inoculation only.

P. 26.—Sarah Madder, No. 1043, had very extensive inflammation in the inoculated arm on the fourth day, but Vaccina regular in its progress.

P. 28. l. 5.—In one case of a child covered with a tetter eruption, the Vaccine Inoculation only produced a large pimple, but the susceptibility of the Small-Pox was destroyed by the Inoculation.

Ibid.—The capability of taking the Small-Pox has been destroyed in some cases in which the Cow-Pock was not larger than a large pin's head, and, in others, in which it was as large as a raspberry.

Ibid.

Ibid. l. 9.—For an instance of anomalous Vaccine-Pock, see No. 564, *Institution Register*. Mary Jones, aged twenty-one years, having only a large pimple, but in which the susceptibility of Small-Pox was destroyed, and there was no effect from subsequent Inoculation.

Ibid.—Sarah Jolly, August 15th, 1800, George Brown, No. 962, and Thomas Down, August, 1800, had only a *gnat bite* like eruption from the Vaccine Inoculation, see *Institution Register*.

P. 30. l. 3.—A boy, six years of age, had been inoculated, as was supposed, for the Small-Pox, in India, and from a scar on the arm, this opinion was so far confirmed, that Dr. Pearson thought it most probable he had really undergone the Small-Pox; but a Physician who consulted him was of opinion, this mark might be from some other cause, or at all events there had been merely a local affection. To give the most satisfactory proof in so doubtful a case, and in which it was of great moment to obtain certainty, the Vaccine Inoculation was instituted in three different places on each arm, from a Subject present. The six punctures produced six Cow-Pocks, perfectly

fectly regular in all their stages, with not more inflammation than usual, and with as slight a constitutional affection as usual, from one pock.

It is not uncommon to meet with persons who have a cicatrix on the arm (in the part commonly inoculated) from various eruptions, wounds, and burns, who undergo either the Small-Pox or Cow-Pock, on due Inoculation.

P. 31.—No. 767. case by Dr. Nelson, in which there was a constitutional affection twice during the Vaccina.

P. 32.—Eruptions occurred in a few cases on the arms inoculated, even before the eighth day.

P. 34. l. 6.—Case of Henry Edwards, æt. three years, No. 573, *Institution Register*. *Suppurating eruptions* in second week after Inoculation appeared with an anomalous Vaccine scab; but in which the susceptibility of the Small-Pox was destroyed. He was inoculated the eighth day after the attack of the Chicken-Pox.

Ibid.

Ibid.—For case of eruption on arm inoculated even somewhat resembling Small-Pox, see No. 538, *Institution Register*.

P. 37.—The infectious matter from the Cow-Pock vesicle, in Eastoff's case, attended by the Small-Pox, excited the genuine regular Vaccina.

P. 38.—Joseph Neale, No. 989, *Institution Register*, being inoculated in different arms for the Cow-Pock and Small-Pox, there was a regular pock of each kind in the parts inoculated, but no eruption.

P. 39, l. 13.—When a patient was inoculated for the Cow-Pock on one day, and the day following for the Small-Pox, we have sometimes seen the Cow-Pock go through all its stages regularly; but the Small Pox eruption of the inoculated part withered or scabbed about the eleventh or twelfth day, without eruptions, while the Vaccine did not become a scab till the fifteenth day or later: but we have never seen the reverse case in which the Small-Pox being inoculated the first day, and the Cow-Pock the second, the Pock from the
L Vaccine

Vaccine infection declined into the state of scab on the eleventh or twelfth day, while the Small-Pox, with eruptions, pass through all its usual stages; for the Vaccine-Pock also did the same.

P. 40.—A person having the itch at the time of the Vaccina, by scratching, produced an eruption not unlike the yaws.

P. 41, l. 14.—On further consideration, we feel inclined to infer, from phenomena of experience, that in cases of the coincidence of the *casual* Small-Pox and Cow-Pock, there is the constitutional specific affection from *one* of them only, and that it is always the variolous fever. First, because of the extreme rarity of two such supposed constitutional affections among the multitude of cases of coincidence of the two eruptive disorders. Secondly, it seems that the evidences for such supposed examples have not been attentive to discriminate supervening disorders by other causes, from those occasioned by the two infectious matters. Thirdly, in no one instance hath the variolous fever and its subsequent eruption, occurred at a later period than the Vaccine fever

fever, usually, or at least frequently, occurs after Vaccine Inoculation. Fourthly, in cases of Vaccine and variolous Inoculation in the same Subject, on the same day, or within a day of each other, (although the two infections take effect) a constitutional disorder occurs but once, and that at the time, and similar to the fever after variolous Inoculation singly; the Small-Pox eruptions succeeding also as in simple variolous Inoculation: But as hath elsewhere been stated, p. 39, if the two kinds of Inoculation be instituted at greater distances of time from one another, there will not only be but one constitutional disorder, but the pock from one of the infectious matters only will subsist through all its stages, the other being prematurely cut down, or withering in its progress; except, indeed, the two infectious matters proceed (which may happen) with equal paces, notwithstanding the different times of Inoculation.

It is obvious, on explanation, that if the Vaccine-Pock proceed to its *acme*, or nearly to its *maximum*, without exciting its own specific febrile disorder, i. e. generally up to about the ninth or tenth day; and that if at this

period either the Variolous-Pock by Inoculation, or the variolous matter admitted by effluvia, *casually* or *naturally*, excite its specific fever, the Vaccine-Pock will subsist, and pass through its stage of *desiccation* or scab, although the variolous eruptions break out, and go through the usual stages of *vesicle*, *pustule*, and *desiccation* or scab: thus apparently the Vaccina and Variola go through all their stages at the same time in the same person; whereas, in reality, it is only the local affection or eruption of the inoculated parts, which are so co-temporary. On this explanation, we avoid the admission of the violation of a law of the human animal economy, that both the variolous and Vaccine fever can be excited distinctly in the same person. It will now appear plain that if the Vaccine infection excite its fever before the variolous, that there can be no variolous fever, nor subsequent eruptions; but the Small-Pox of the inoculated part may, like the Vaccine, subsist and pass through its respective stages. Hence also, it will easily be perceived, in what circumstances the Inoculation of the Vaccine matter can prevent the Small-Pox, even after the variolous matter has been introduced, and while it is locally acting.

P. 43, l. 7.—No. 1257, a child, nine months old, March, 1803, had when inoculated, eruptions, especially on face and two or three places of body, in all about five, not unlike variola, which disappeared in a day or two without leaving scabs; and re-appeared in a week further in the course of an hour while coming from the country to town. Had been feverish for a day preceding, being now the fourth day from Inoculation with the usual effect.

P. 43, l. 11.—In H. Elder, September, 1800, the Chicken-Pox broke out the day of the Vaccine Inoculation, and both diseases proceeded as usual when singly occurring.

Ibid.—There is evidence of the poison of Measles, of the Ulcerous Sore Throat, of Variella, Hooping-Cough, Influenza, &c. being in the constitution (even several of them at once) at the time of the Vaccine Inoculation, yet none of them seemed to vary the effect of the Vaccine matter except sometimes impeding its progress; but the variolous poison either obviously extinguished the nascent Cow-Pock if the variolous fever was excited before the
eighth

eighth day; but if this fever occurred at a later period, the Cow-Pock continued its course.

Ibid. l. 10.—A case occurred lately in which there was constitutional affection from either varicella or Vaccina, or from both, on the tenth and eleventh days after Vaccine Inoculation, with regular Vaccina, and Chicken-Pox eruptions on the thirteenth day. It now seems possible for the infections of Small-Pox, Chicken-Pox, Hooping Cough, Ulcerous Sore Throat, Measles, and Cow-Pock to subsist at the same time in the constitution, and produce their respective diseases; and death may be occasioned by their joint co-operation which would not have happened from them singly.

P. 43 and 46.—No risque of taking Small-Pox by living with those ill of them, provided the Vaccine Inoculation take within a certain time after exposure to the variolous infection.

Sept. 4th, 1800, No. 150 to 154, five children of the same family were inoculated at the Institution: two had been exposed to the Small-Pox at school, and were, on that account, brought home, and it appeared that they were
 attacked

attacked with the variolous fever three days before the Vaccine Inoculation, for the eruption began on the evening of the day of that Inoculation: all five, however, took from the Vaccine infection, but the two in the Small-Pox on the sixth day after Inoculation had small vesicles in the inoculated parts which were already scabbing; the three other children, (one of which officiated as nurse to the Small-Pox patients,) all passed through the Vaccina regularly without any disorder from the variolous matter.

P. 46, l. 1.—It is very satisfactory to know that in at least of 900 children while cutting teeth at all periods, not one was in danger from the Vaccina on that account.

P. 46.—One of the worst cases was one in which there was fever and diarrhæa from the eighth to the twelfth day, with epileptic fits on tenth day, yet there was only one vesicle and that without areola.

P. 46, l. 13.—We have no evidence that any disorder intervening can permanently suspend the Cow-Pock after the infection has once taken effect; but probably at any time, before
the

the constitutional affection, if the local affection be destroyed by caustics, or be removed by extirpation with the knife, or even a new and different inflammation be excited, the Vaccina may be prevented taking effect constitutionally, and hence, in such case, the Subject will be liable to the Small Pox.

Ibid.—The Small-Pox cannot be excited either in the casual way, or by Inoculation, during the Cow-Pock, provided the Vaccine specific fever be excited before the variolous infection has excited its specific fever. And it appears from experience, that the Vaccine infection produces the constitutional disorder according to the same law, in point of time, that the variolous infection does. Hence, the chance of preventing the Small-Pox after the admission of the infection into the constitution, is equally great by the Vaccine as by variolous Inoculation.

P. 47, l. 16.—Diarrhæa occurred in a few infants before and during Vaccina. Some of these got well while under Vaccination; and in others this complaint continued, without seemingly influencing the inoculated disorder.

P. 43,

P. 48, l. 18.—An eruption of pimples on the inoculated arms only, occurred in a few instances, from the ninth to the twelfth day, especially when much inflammation, or a sore from the Vaccine-Pock was produced.

Ibid.—No. 641, *Institution Register*. Warty eruptions on the 23d day after Vaccine Inoculation.

P. 48, l. 18.—An eruption was excited twice or thrice on the face, seemingly by the Subject rubbing his own Vaccine matter on that part.

Ibid.—In another case, a child when inoculated, had a scabby eruption, and it was much increased after the Vaccine Inoculation, but otherwise was in good health.

P. 49.—The Vaccine vesicle, if excited at all after the Vaccina, is never completely formed, comparatively with the form of it in persons who have not undergone this affection; and it is of shorter duration than in such persons. Whether the matter of this incomplete vesicle is sometimes capable of exciting the
Vaccina

Vaccina both constitutionally and locally, so as to destroy the susceptibility of the Small-Pox, seems undecided.

Ibid.—Persons who had undergone the variola, have sometimes inserted, by casual punctures or scratches, the Vaccine matter with the effect of a phlegmonous pimple, but quite different from the Vaccine vesicle, in those who have not had the Small-Pox or Cow-Pock.

Ibid.—Several persons who had gone through the Small-Pox, have had phlegmonous swelling with matter, in an eruption from Vaccine matter, casually applied to a wound or ulcer, and even febrile symptoms; but such cases were totally different from the regular Vaccina in their course and duration.

P. 53.—No. 420, in which considerable areola surrounding the Vaccine-Pock, but no fever; and No. 442, very great inflammation, with even swelling of axilla, and no fever.

Ibid.—The cases of extensive and intense inflammation of the inoculated arms which have occurred, ought to be ascribed rather to the

the peculiarity of the Patients' constitution, than to any other circumstances; because we find such inflammation after the minutest puncture in Inoculation, and numerous instances occurred of large scratches by clumsy Inoculators without any such subsequent inflammation.

P. 54, l. 14.—No. 1254, the nascent vesicle on the fourth day being unusually forward, afforded matter which produced the Vaccina in No. 1258, 1259, 1260, and 1272, in which matter of the eighth and eleventh failed.

On the eighth day, No. 1254 had a small vesicle on the margin of the Vaccine-Pock, from the accidental Inoculation by puncture, in taking matter from this Subject on the fourth day.

P. 56.—In the circumstance of the Subject having been, or being at the time of Inoculation exposed to the Small-Pox, it is recommended to repeat the Inoculation, by one or two punctures every day, or every other, for three or four days, to have the greater chance of ex-

citing the Vaccina, and thus counteracting the Small-Pox.

P. 56, l. 17.—In the course of our trials to introduce the new Inoculation, especially in the years 1799 and 1800, it oftentimes happened that, on the account of the scarcity of matter, the frequent failures from its having been dried, and the want of willing Subjects, it was thought warrantable to inoculate one person by means of three punctures or scratches in each arm; for as to insert at least ten times as much matter as is usual in other cases; but when even in all the parts thus inoculated the Cow-Pock was excited, we never observed that the constitutional disorder was either greater or less, or took place sooner or later, or more or less frequently occurred at all, than when the Cow-Pock was excited by the smallest visible quantity of matter introduced by one puncture with the finest pointed lancet. 2d. This proposition receives confirmation from a constant practice of the Cow-Pock Institution, where it is the custom to inoculate one place in each arm; but it happens not unfrequently, that the infection is efficacious in one place only, and then it does not appear from the register of the cases,

cases, that the constitutional affection is at all less than when both arms are affected. 3d. Notwithstanding the assertions to the contrary we apprehend there is sufficient evidence to shew that the practice of variolous Inoculation affords additional proof of the truth of the above proposition; in which, if the degree of disease were as the quantity of variolous matter inserted, as it is obviously much greater at one time than at another, the effects proportionate to such different quantities could not escape notice. 4th. It is a fact, which is fully established by the registers at the Vaccine Institution, that comparatively severe constitutional affections occur when the local affection is the most slight, as frequently as when it is the most severe.

Hence it may be lawful we think to conclude, that an invisibly small quantity of Vaccine matter is more than enough to permanently destroy the specific excitability of the human animal economy to that matter; and therefore that the quantity used in practice, although more than enough for that purpose, cannot produce any difference in the degree of the constitutional affection. This is agreeable

to

to the law of specific excitability to other stimuli; as of the stomach to the digestion of food; of the stomach to the action of vomiting from the stimulus of ipecacuanha; as of the intestines to senna; as of the voluntary organs to the stimulus of volition, &c.; which stimuli can only excite a determinate quantity of action in whatever quantity they are applied.

P. 62.—It may seem superfluous to observe, that there was no instance of communication of the Cow-Pock by effluvia, which must have happened in all probability, if possible, at the Institution; where persons were exposed in the same room among others in the Vaccina before Inoculation, which so often failed in the first trials. Hence then the Vaccina can only be excited by intentional or by casual Inoculation.

Ibid.—Case, No. 991, fourteen months of age, was inoculated four times for Cow-Pock, but succeeded the fifth, although the pock not regular, and an eruption of pimples was produced.

P. 63.—Needham's case, No. 638, was inoculated three times for the Small-Pox, and three times for the Cow-Pock, without exciting
either

either disease, although not known to have had either of them.

Lady A.'s servant maid was inoculated three times for the Cow-Pock, but a red spot and small scab only were produced, although not had the Small-Pox.

Ibid.—Inoculators for the Small-Pox can now assign a reason for some of their Subjects not taking the Small-Pox, viz. their having undergone the Cow-Pock early in life in the casual way.

P. 63, l. 9.—As an instance of a family constitution to resist the Cow-Pock and Small-Pox. 1. One child did not take the Small-Pox until the fifth Inoculation, and then had only one pustule on the part inoculated, without any fever. 2. Another child, at three months of age, was inoculated four times for Small-Pox before it took effect, and then only as the former, locally. 3. A third child took the Small-Pox on the first Inoculation, and had fifty eruptions. 4. A fourth child, No. 821, at the Institution, was inoculated four times for the Cow-Pock before the disease was excited,

cited, and then, seemingly, not 'till the fifth Inoculation in four days from the fourth; but the vesicle was very small, and the fever was on the ninth day, from the fifth Inoculation.

P. 64.—In the same Subject, in one arm there has occurred a red areola, and, in the other none, around the Vaccine-Pock.

Ibid. l. 27.—There are, besides the above four other sets of symptoms, which however are not constant or essential, but are peculiar and characteristic. These are distinguished by
1st. The *Erythema* excited around and the *Phlegmon* immediately under the vesicle of the inoculated part. 2d. The *febrile affection* usually on the 9th day. 3d. The *Eruption* succeeding the febrile affection. 4th. The *Effera Vaccina* succeeding the desiccation of the vesicle. Further; it will be proper to notice four other sets of symptoms which are neither essential nor peculiar. 1st. Those from *Suppuration* or by the vesicle, or *Pemphix*, becoming a *pustule*. 2d. *Ulceration* from the bursting of the vesicle, or tearing away of the scab. 3d. Inflammatory swellings of the axillary glands. 4th. Eruption

Eruption of various spots, pimples, and vesicles at subsequent periods to the Inoculation.

That in some cases there should be extensive inflammation, even to prove mortal, and in others little or none, is analogous to what happens from other stimuli applied to the skin, given kinds of which produce such different degrees of inflammation in different constitutions. So, mercurial ointment by friction, will excite numerous pimples and inflammation in some persons, but in general no inflammation at all. A puncture with a clean needle or lancet, will in some excite excessive inflammation, and death. Caustic vol-alkali, or mustard, cannot be borne on the skin of some, but in others they excite bearable inflammation. A blistering plaister of cantharides has sometimes occasioned mortal inflammation, and so has the puncture in blood-letting. A plaister of Burgundy pitch in certain persons irritates so as to excite a fever.

P. 30, l. 3.—We submit to the determination of others, an hypothetical explanation of the manner of the Vaccine-Pock growing after the ninth or tenth day gradually less and less efficacious.

cacious. The inoculated matter in the first place produces its own specific stimulation, by which fluid matter is secreted in a vesicular eruption; which matter is impregnated with the Vaccine poison. This secretion continues till a part of it is absorbed, and that change thereby effected in the whole constitution, by which it is rendered incapable of being acted upon in a similar way in future, either by the Vaccine or variolous poison. From the moment of this constitutional change, the peculiar Vaccine secretion ceases, and mere secretion of serous fluid, or at least *not Vaccine*, goes on from the irritation simply of the fluid already collected. Hence, such serous fluid, by altering the Vaccine poison, or this Vaccine poison being absorbed, the pock affords matter, frequently, of little or no efficacy after the twelfth or fourteenth day. That no pus is secreted in general, can only be imputed to the nature of the Vaccine poison itself not stimulating as the variolous does, usually about the eighth day, to produce pus; but in place of so doing, the limpid fluid becomes thickened either by the absorption of the thinner parts into a scab, or by combination with oxygen. The secretion itself, and the inflammation, gradually

dually cease, from the excitability which affords the inflammatory action and secretion being exhausted.

P. 49 and 52.—The ground for the opinion that persons who have gone through the Small Pox are still susceptible of the Vaccina, as well as those who have already undergone the Vaccina, is still maintained by a few partizans.—The sources of this error we think may satisfactorily be demonstrated in the present improved state of the history of the Vaccina.—1st. The characters of the Cow-Pock were not known even to the first Promulgators of the Vaccine Inoculation, for want of sufficient experience, and hence, an eruption of the inoculated part, in reality, *not a Vaccine one*, was mistaken for *a Vaccine one*. 2d. The Vaccina, as above stated, very often occurs without any perceivable disorder of the whole constitution. 3d. As a pimple or eruption can be excited, in a small proportion of subjects by variolous matter, in the part inoculated, in a person who has already gone through the Small-Pox, (the matter of which eruption it is attested can excite the Small-Pox both constitutionally and locally in others) so the Vac-

cine matter, in a small proportion of Subjects can excite a pimple or eruption, which may be mistaken for the real Vaccine-Pock; the matter of which may, perhaps, excite the Vaccina in others, both constitutionally and locally. Nay, an affection of the axillary glands, and some fever may even be excited in such cases of Inoculation of Vaccine or variolous matter so that it is only by a knowledge of the properties of the Vaccine-Pock, and especially by their progress or course, that such eruptions can be distinguished from the Vaccine-Pock.—

4th. In the Small-Pox there is almost always both perceivable fever, and, on the body, eruptions; notwithstanding it is not allowed that there is evidence that this disorder can be excited more than once: but these criteria of fever are very often wanting, and of eruptions almost always so, in the Vaccina. Here we should consider:—1st. The rarity of the cases of local affection on Inoculation, or such as at all resemble the Cow-Pock, in persons who have had either the Small-Pox or Cow-Pock.—

2d. The equivocal properties of such local affections.—3d. That in particular, they are certainly essentially different in their course, duration, and scab, from the Vaccine ones.

The

The following case, No. 1244, from the *Institution Register* is the most resembling one we have met with of the Cow-Pock; perhaps after the Small-Pox. D. H. aged twenty-five years, did not know that he had gone through the Small-Pox, although there was a scar on his arm from Inoculation.

15th March.—Inoculated him in each arm directly from a Subject, by which only little pimples were produced for a few days.

25th March.—Re-inoculated by introducing more fluid matter than usual into each arm.

29th March, 4th day.—Complained much of right arm being stiff, lame, and painful with a red pimple on the part inoculated; but on the other arm, nothing scarcely seen.

1st April, 8th day.—Complained still more of right arm, which felt swelled, and the part inoculated exhibited an oblong eruption not very unlike the Cow-Pock, scarcely containing a fluid; but was surrounded by a very pale red areola, and attended by pain of the axilla. From a little moisture of this eruption inoculated immediately, No. 1280, A. Vickery, five weeks old, without effect.

5th April, 12th day.—Pains of arms gone off, but right remains stiff. Eruption of inoculated

oculated part became an entire scab two days ago, and now is rough and brown, quite unlike the Vaccine vesicle scabbing on the 12th day. Some Practitioners who saw this Subject pronounced the eruption a Vaccine one, but others, of much more experience, declared otherwise.

8th April, 15th day.—Small irregular figured black scab on part inoculated, not glossy and well defined as the Vaccine.

P. 63, l. 9.—No. 328, Jane Little, aged twenty-one years never had the Small-Pox. She was inoculated with Vaccine matter which excited the Vaccina in other persons; but although repeated three or four times, nothing but little pimples could be produced of a few days duration. She was also inoculated for the Small-Pox which equally failed. On inquiry, found that her father, mother, brother, and sister never had the Small-Pox, but had not been inoculated.

Further note to page 25.—No. 1143, on the 8th day after Inoculation, appearing to have not taken, was re-inoculated. On 4th day after the

the second Inoculation, seemed to have evidently taken from that only. On the 8th day from the second Inoculation, and 15th from the 1st, vesicles appeared from both Inoculations, which were beginning to scab, and were surrounded with a red areola. On the 11th day from the second Inoculation, and 18th from first, the scabs were perfectly formed, The child had a diarrhæa, and restless nights during the whole of the attendance.

In this case, the matter of the first Inoculation seems to have been excited into action by that of the second; and this fact seems also to explain why the Small-Pox so often breaks out casually about the usual time of the constitutional affection by the Cow-Pock.

P. 49 continued.—No. 480, aged five months, had with regular Vaccine-Pock, febrile disorder on the 9th, 10th, and 11th day, with eruption of pimples on the 13th day, not unlike Chicken-Pox, but did not entirely disappear till after the 28th day. From matter of these eruptions, inoculated No. 493, without effect, but produced the Vaccina by matter of Cow-Pock vesicle.

The

The most remarkable eruptive case in our experience, was No. 1196, five months of age, inoculated from 1188, with matter which produced in others the regular Vaccina. The pocks came forward in the inoculated parts in the usual course, but he was disordered constitutionally from the 7th to the 11th day, with heat, loss of appetite, &c.; and on the 8th day, two Vaccine-like vesicles were seen on the *nates*, which grew from the pimple state on the 6th. By the 11th day, there were about sixty more eruptions much smaller than the two former, most of them being like Cow-Pocks of the 5th, 6th, and 7th days. On the 15th day, the eruptions had dried up, not even leaving scabs. Health now very good. Vaccine scabs on parts inoculated were of the usual figure, but of a brown colour. See *Plate II.* 4. fig. 1, 2, 3.

No. 1201, aged seven months, subject to a tettery eruption, was inoculated in each arm, from the 8th day vesicle on the *nates* of No. 1196.

4th day.—Taken in both arms. Eruption of pimples appeared.

8th day.—On left arm there is a large red pimple; on right, a vesicle, apparently suppurating,

purating, has risen. Eruptions on body disappeared. Is in good health.

11th day.—Had scratched the parts inoculated, to inflame the arms with an appearance of pus in the inoculated parts. Was feverish the day before.

12th day.—On right arm, a fluid like that of Cow-Pock surrounding a scab. On the left, the part inoculated looks yellow, but not scabbing.

15th day.—No scabs on the arms; but probably had been scratched off.

In six weeks the tettery eruption broke out again on the body, and over the hairy scalp.

In eight weeks, excepting from some scabs of the eruption, was quite well, and was re-inoculated in two places in each arm immediately from No. 1254, John Tukes, with matter of the 9th day, but without any effect, except a few red spots, for a few days.

In nine weeks, was inoculated at the bedside of a patient in the Small-Pox, with variolous impid matter of the 8th day, in two places in each arm.

On the second and third day after Inoculation, all the four punctured places were red as they had taken the infection; so that already much more inflammation was excited by the

variola than by the Vaccine matter of the second Inoculation: but the appearances of infection having taken, went off in a few days further.

P. 56, l. 17.—Eliz. Pitt, nine weeks old, in four days after Inoculation, was again inoculated in the punctures where the first were supposed to have failed; but in three days time vesicles like 6th day appeared, and on the 12th day, scabs appeared like those of the 15th.

P. 96, case No. 1201, con.—The pocks were disfigured by scratching, so as to destroy the *criteria* of the Cow-Pock; but the scars, and the two further unavailing Inoculations, removed all ambiguity.

It is taken for granted, that the valuable communication of Mr. Partridge on the proportional mortality of the Small-Pox will be a very acceptable addition to the present Report.

March 21st, 1803.

AN ACCOUNT, extracted from the parish registers of Boston, in the county of Lincoln, of the number of persons baptized, and buried, and of the number of deaths by the Small-Pox.

Small-Pox (distinguished in those registers by a certain mark) within each year, from the year 1749 to 1802, both inclusive; and of the population of the same parish, in the years 1767 and 1801:—Designed to shew the extent of mortality by the Small-Pox; it seeming highly probable, that the proportion of deaths by this disorder throughout Great Britain and Ireland (and perhaps, other countries) is not less, but greater than within the parish of Boston; which has no circumstance of narrow streets, crowded houses, manufactories, or want of medical assistance, tending to make the disorder more fatal than in other places.

For the use of, and most respectfully presented to, the Vaccine-Pock Institution, London.

By SAMUEL PARTRIDGE, M. A. F. S. A.
Vicar of Boston.

N. B. This account does not include persons noticed in the registers, at the end of each year, as dying within the parish of Boston, and buried in other parishes; but only those actually buried in this parish: Because, it would otherwise be necessary to set off persons brought into Boston for burial; which is impracticable; and because, it might interfere with accounts of burials which may be furnished from other parishes. Neither does it include the few persons interred in the burying ground of Dissenters; because such an account would be unauthentic and uncertain.

Anno Domini.	Baptized.	Buried.	Died by Small-Pox.
1749	68	120	48
1750	80	93	0
1751	55	59	0
1752	88	85	0
1753	79	73	0
1754	88	111	1
1755	74	102	19
1756	66	110	34
1757	93	86	4
1758	83	88	4
1759	102	91	0
1760	106	84	2
1761	80	94	0
1762	95	134	3
1763	92	206	69
1764	130	102	5
1765	112	113	0
1766	144	117	0
1767	129	95	0
1768	131	117	0
1769	159	120	3
1770	140	166	78
1771	150	133	2
1772	138	130	6
1773	157	143	27
1774	160	112	0
1775	162	186	55
	2961	3070	360

A. D. 1767. Inhabitants and Sojourners, accurately numbered, 3470. Inhabited Houses, 832; or, 4, 17 in each House.

Carry forward.

Anno Domini.	Baptized.	Buried.	Died by Small-Pox.
1776	165	176	7
1777	165	131	6
1778	166	174	18
1779	173	195	3
1780	137	247	0
1781	136	193	19
1782	133	177	0
1783	162	149	0
1784	147	202	58
1785	168	124	4
1786	152	114	0
1787	168	130	0
1788	181	145	0
1789	184	185	27
1790	204	126	0
1791	218	93	2
1792	219	152	0
1793	195	141	1
1794	197	148	0
1795	217	161	1
1796	214	205	64
1797	240	166	0
1798	227	112	0
1799	229	133	0
1800	225	147	1
1801	251	105	1
1802	243	189	33
Brought forward	5109 2961	4220 3070	245 360
Totals	8070	7290	605

A. D. 1801. Inhabitants and Sojourners, accurately numbered, 5926. Inhabited Houses, 1221, or, 4,85 in each House.

Very nearly one-twelfth part, of all the persons buried in Boston within fifty-four years, have died by the Small-Pox. Suppose the mean population of this parish, during the above term of fifty-four years, to have been 4,120; and the mortality by Small-Pox there, and in Great-Britain, and other parts of Europe, equal, it appears highly probable from the answers and returns made in consequence of the *Population Act*, 41, *Geo. III.* that the mean population of Great-Britain and Ireland, during the above fifty-four years, was 12,000,000; and the mean population of Europe, during the same term, was calculated to have been 150,000,000.

The deaths by Small-Pox, therefore, in Great-Britain and Ireland, within fifty-four years, are 1,762,135, or, 32,632 annually; and in all Europe 22,026,699, or, 407,901 annually. And if it could be stated, with any probability, at what periods the Small-Pox first appeared in the other quarters of the world, and what has been the mean population of each, then *some idea* might be formed of that havock of the human species, which has been made by this disorder. May the Vaccine-Pock Inoculation become the means, under Divine Providence,
of

of causing this malady, with all the pain and misery produced by it, to cease throughout the world!

P. S. If the above term, of fifty-four years, be divided into *two* equal periods, then the proportion of deaths by Small-Pox to other causes, is, for the first period, a very little less than 2 in 17, and for the second period, a little less than 1 in 17.

If the term be divided into *three* equal periods, then the proportion is, for the first period, a little less than 1 in 10; for the second, a little more than 1 in 10; and, for the third, a very little less than 1 in 19. This computation may, perhaps, be applied towards a solution of the question concerning the increase or diminution of mortality by the Small-Pox, since the introduction of Inoculation. And it may, hereafter, be applied, towards shewing the progressive, and the final happy effect of Vaccine-Pock Inoculation.

Observations on Mr. Partridge's Communication.

The length to which our Report has been already extended, compels us to decline offering

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ing a great number of remarks and observations excited by the extremely valuable account of the baptisms, population, burials, and particularly the deaths by the Small-Pox, each year for the last fifty-four years in the parish of Boston. Accordingly, we shall confine ourselves to a few of the important truths which are manifested by Mr. Partridge's paper.

1. It appears that the proportion of deaths by the Small-Pox at Boston, during the last half century, has been about $\frac{83}{1000}$ of the whole number of burials. This is a smaller proportion than in London during the same time, which, according to Dr. Heberden's tables, appears to be, on the average, $\frac{97}{1000}$ from 1750 to 1800, (See Observations on the Increase and Decrease of different Diseases, &c. by W. Heberden, M.D. F.R.S. 1801. 4to. p. 4—6.) But,

2. The proportion of deaths by the Small-Pox at Boston, on the average, in three successive terms of eighteen years each, viz. for 1749 to 1802, has accordingly diminished, being, in the first term, almost $\frac{100}{1000}$; in the second, a little more than $\frac{100}{1000}$; and, in the third, not much less than $\frac{53}{1000}$; whereas, little variation has

has happened in London, the numbers being from 1751 to 1760 nearly $\frac{102}{1000}$; from 1761 to 1770 $\frac{102}{1000}$; from 1771 to 1780 $\frac{96}{1000}$; from 1781 to 1790 $\frac{92}{1000}$; and from 1790 to 1800 $\frac{94}{1000}$; (Heberden's Tables, p. 4-6.)

3. It appears, that in the 1st decade of the Boston registers, for fifty-four years, there were four years exempt, and three years in which only nine died of the Small-Pox; in the second decade, there were six exempt years, and three in which ten persons died; in the third decade, there was one year of exemption, and two in which five died; in the fourth decade, were six years free from the disease, and two in which only seven died; and, in the fifth decade, there were five years in which the distemper was absent, and three in which only four died. In the last four years, two only died in three of them. Hence, of fifty years there were twenty-two exempt, and thirteen in which not quite three died yearly; so that in fifteen of these years, 535 died of the Small Pox, out of nearly 2002, the average of every fifteen years total burials, from 1748 to 1749 both inclusive. It is worthy of remark, also, that in one of these years, nearly one half, or $\frac{78}{100}$; and, in several

several of them above $\frac{1}{3}$ of the deaths were by the Small-Pox.

How different is this course from the course of the distemper in London! where we find, in the first of the five preceding decades, the variation of deaths by the Small-Pox to be between, about, 77 and 173, out of every 1000 except two years between 40 and 47; in the second decade, the variation is between 72 and 138; in the third decade, between 70 and 153, except two years of 42 and 48 deaths; in the fourth decade, between 55 and 169 deaths except one year, in which the number was 355; in the fifth decade, the variation was between 61 and 183, except two years of 30 and 49. (See Heberden's and Lettsom's Tables.) The greatest mortality in our annals was 3548 by the Small-Pox, out of the whole burials 19288 in 1796, or nearly $\frac{1}{5}$; and the smallest proportion since 1702* was the very following year

* In 1702, there died 19481, in which were only 31 or 16 per 1000 by the Small-Pox; the smallest proportion on record. Dr. Lettsom will pardon our rectifying, we apprehend, an error, in stating 156 instead of 1560 deaths by the Small-Pox, for the year 1684, thus of course erroneously making only $\frac{7}{1000}$ deaths by the Small-Pox.

1797, being 522 out of 17014 total deaths, or about $\frac{3}{1000}$. (See a MS. extract from the parish register by Mr. Lynam, and Lettsom's Table.)

The difference between the course of the Small-Pox, and the less mortality in the country than in London may, perhaps, be accounted for: 1st. From the incessant practice of Inoculators in London furnishing a perpetual supply of contagious matter; which is otherwise in the country, and where but *occasionally* a part of the inhabitants undergo Inoculation.—2d. From the increased proportion of persons inoculated within the last twenty-five years above the proportion in London, the amount of the total of burials may have been lessened.—3d. From the improved method of treatment, especially in the admission of fresh air, the cool regimen, and more free use of purgatives, and even of opium; which, perhaps, have been employed much later in the country than in London.—4th. From other diseases, besides the Small-Pox, being proportionally more fatal in the first twenty-seven than the second twenty-seven years; and not corresponding to the mortality in London by the same or other distempers.

4. It is from the foregoing comparative view of the course of the Small-Pox in the country to that in London, rendered probable, that Inoculation has been beneficial to the public in the former situation, but not in London; for, at Boston, in the last twenty-seven years only 245 deaths by the Small-Pox are registered, from a population of near 6000; but in twenty-seven years immediately preceding, 360 deaths by the Small-Pox are registered, from a population of about 4000. "In London, more persons have died of the Small-Pox since the introduction of Inoculation—out of every thousand deaths in the bills of mortality attributed to the Small-Pox during the first thirty years of the eighteenth century, before Inoculation could have had any effect upon them, they amounted to 74. During an equal number of years at the end of the century, they amounted to 95."—Heberden, in work above cited, p. 36.

5. With respect to Mr. Partridge's calculation of the mortality in Europe by the Small-Pox during the last fifty-four years, it appears to approximate to truth, as far as *data* will at present allow; except that it does not seem fair to estimate the mortality to be in the same ratio in London, and in provincial situations.

6. What

6. Whatever calculation be admitted of the proportional mortality by the Small-Pox, as at the lowest it appears to be the most fatal of all distempers; and as there appears no prospect of extinguishing it by Inoculation of it under the existing laws of civil society; it might be worth considering whether any or what influence Vaccine Inoculation has had since its introduction at the beginning of the year 1799. This question cannot be determined at present, because it requires the comparison of a long series of years of Vaccine Inoculation, with an equal one of the Small-Pox. But meanwhile, the underwritten statement from the London Bills may be useful.

1. *During the Vaccine practice.*

Year.	Total of Burials.	Deaths by Small-Pox.
1799 — —	18134 — —	1111
1800 — —	23068 — —	2409
1801 — —	19374 — —	1461
1802 — —	19379 — —	1579
	<u>79955</u>	<u>6560</u>

2. *Four years preceding the Vaccine practice.*

1798 — —	18155 — —	2237
1797 — —	17014 — —	522
1796 — —	19288 — —	3548
1795 — —	21179 — —	1040
	<u>75636</u>	<u>7347</u>

During

During the Vaccine Inoculation for the term of four years, the mortality was then by the Small-Pox nearly $\frac{82}{1000}$ of the whole deaths; and for the same term immediately preceding, a little more than $\frac{97}{1000}$ of the whole deaths occasioned by the Small-Pox. But it will be said that the year 1799 should not be reckoned among the years of the new practice, as probably not more than 4000 were vaccinated; and if the proportional mortality be taken for each year, it will be for 1800, nearly $\frac{105}{1000}$; for 1801, a little less than $\frac{76}{1000}$; and for 1802, a little less than $\frac{82}{1000}$. And if the four years preceding the new Inoculation be calculated singly, then the mortality will be for 1798, a little more than $\frac{123}{1000}$; for 1797, a little less than $\frac{31}{1000}$; for 1796 nearly $\frac{184}{1000}$; and for 1795, nearly $\frac{49}{1000}$. Or, if the proportion of deaths by Small-Pox, during the years 1800, 1801, and 1802, be taken together and compared, to the whole burials, then they will be found to amount to nearly $\frac{88}{1000}$. If the three years preceding the Vaccine practice (from the small number vaccinated, omitting the year 1799) viz. 1798, 1797, and 1796 be calculated conjointly, the proportional mortality by the Small Pox will be nearly $\frac{115}{1000}$. It would be easy to demonstrate

demonstrate from other statements, that any conclusions drawn from the proportional mortality of the Small-Pox, as depending upon the Vaccine Inoculation, must at present be fallacious. For one cannot assign as a satisfactory reason the Inoculation of 25,000 or even 30,000 persons, in London for the Cow-Pock in 1802, 1801, and 1800, producing a greater number of deaths by the Small-Pox, as hath actually happened than in 1798, 1797, and 1796; on the contrary, it would be from this reasonable to impute a diminution of the mortality, if it had happened, to the generating less variolous matter. It seems, we can only draw *three conclusions*, 1st. That a much greater proportion of persons than usual were affected with the Small-Pox during the years 1800, 1801, and 1802; 2d. That an uncommon number died; 3d. That a much greater proportion than usual neglected to avail themselves of Inoculation for the Small-Pox. Hence then, it is not manifest, that the Vaccine Inoculation has been a benefit to population, however great a one it has been to individuals.

7. Concerning the benefit to individuals from the Vaccine Inoculation, it, perhaps, will be

be allowed to be reasonable :—1. That if in the years 1799, 1800, 1801, and 1802, 60,000 were vaccinated in the united kingdom, who otherwise would have been inoculated for the Small-Pox, that 350 or 400 lives have been saved; as five to seven per thousand usually die by the Small-Pox Inoculation.—2. To the account of *individual* benefit, must also be added the sufferings of illness being 100 times less than in an equal number under the inoculated Small-Pox :—and 3. The same proportion of less subsequent damage to the constitution. But Philanthropists will joyfully contemplate the most important benefit *ultimately* to the whole human race, viz. the diminishing the stock of variolous matter—a benefit which cannot be felt at present for reasons above delivered.

THIRD ANNUAL REPORT

OF THE

VACCINE-POCK INSTITUTION,

FOR INOCULATING THE POOR,

SUPPORTED BY THE

VOLUNTARY SUBSCRIPTIONS, BENEFACTIONS, AND
LEGACIES OF THE PUBLIC,

(Removed from Warwick-Street, December, 1800, to No. 5, Golden-Square,
and to No. 44, Broad-Street, Carnaby-Market, May, 1803.)

FROM ITS FOUNDATION, DEC. 2, 1800, TO DEC. 31, 1802.

PRESIDENT,

The Right Honourable the Earl of CHOLMONDELEY.

VICE-PRESIDENTS.

Rt. Hon. Lord Petre, F.R.S. &c.	H. J. De Salis, D.D. F.R.S.
The Rev. Sir George Lee, Bart.	William Adam, Esq.
Sir George Baker, Bart. F.R.S. &c.	William Devaynes, Esq. M.P.

TRUSTEES.

T. Noble, Esq.—Charles Binney, Esq.—William Bosville, Esq.

TREASURERS,

Thomas Payne, Esq. John Heavyside, Esq.

SECRETARY AND COLLECTOR.

Mr. William Sancho.

THOSE who are acquainted with only a part of the history of the Small-Pox, scarcely take into their contemplation more than the advantages of the *inoculated* over the *natural* Small-Pox, in the points of preservation of the lives

of individuals, and the substitution of a disease generally slight, for a disease generally severe: and such persons imagine, that the practice of Inoculation neither requires, nor is, perhaps, capable of farther improvement. But those who are more extensively acquainted with the history of the Small-Pox, know, that it is productive of a great deal of mischief, notwithstanding the advantages of Inoculation—For,

1. Under the best treatment, a certain proportion of persons die in the inoculated Small-Pox; and although the proportion of deaths to the recoveries may not exceed six out of a Thousand Patients, the distress occasioned by these fatal cases is more severely felt than when such cases occur in the casual disease: therefore the substitution of a mild affection will contribute to lessen the distress which would thereby be occasioned.

2. It seems fair to calculate, that, in the inoculated Small-Pox, one in twenty-five patients undergoes a severe illness.

3. The

3. The numerous sources of the Small-Pox infection now preclude every prospect of extinguishing this malady; and unless Inoculation were universally practised, it is most probable that the proportional mortality by the natural Small-Pox is rather increased than diminished, in consequence of the more extensive dissemination of the infection by Inoculation.

4. In a certain proportion of inoculated cases of Small-Pox, deformities of the skin are produced by the eruptions, which no Practitioner can be answerable for preventing in any instance. Diseases also are more frequently excited by variolous than by the Vaccine Inoculation, to which a disposition pre-existed in the constitution.

5. In particular families, and in particular states of the constitution, as in pregnancy, &c. the Small-Pox are an exceedingly dangerous disease, even by Inoculation. Now it is manifest, from the accounts which have been collected of the disorder called by the name of the Cow-Pock, and particularly from the experience by Inoculation of it since January,

1799, that the hurtful effects of the Small-Pox above stated, may be prevented by substituting for it the Inoculation of the Cow-Pock, —Because,

1. Of much above 100,000 persons in Europe who have had the inoculated Cow-Pock, it is very doubtful whether any one has died of the affection by Inoculation. There is, however, good ground for believing, that the fatal cases reported by Inoculation, in some instances, were from the interference or super-vention of other diseases; and in other instances, the reports, on enquiry, were found to be groundless, the deaths not having happened.

2. Not a single well-attested instance has been produced, among more than 50,000 of the above persons known to have been constitutionally affected with the inoculated Vaccine Pock, and who were subsequently inoculated for the Small-Pox, of this disease being taken; and in those few instances which have been supposed cases to the contrary, there was every reason to believe the inoculated Disease was local, or not the real disorder. Tradition-ally

ally, this fact has been established time immemorial, with regard to the casual Cow-Pock.

3. It may safely be affirmed, that the inoculated Cow-Pock is generally a much slighter disease than the inoculated Small-Pox; and that the proportion of severe cases in the latter, is to the former as at least a hundred to one.

4. It does not appear that the genuine Vaccine-Pock can be propagated like the Small-Pox, by effluvia from persons labouring under it. Hence, if the Vaccine Inoculation should be universally instituted in place of the Small-Pox, it is reasonable to conclude, that this most loathsome and fatal malady will be extinguished; and, like the Sweating Sickness, Plague, certain kinds of Leprosy, &c. be known in this country only by name.

5. It does not appear that the Vaccine effluvia, like the Small-Pox, can be conveyed so as to produce the disease indirectly from diseased persons, by adhering to clothes, furniture, bedding, letters, &c. Hence no danger of its propagation in these channels is to be apprehended from the universal practice of implantation
of

of the Cow-Pock. Further: it is highly important to consider other advantages of this Inoculation over the Small-Pox; which are, besides those already mentioned, that it may be practised in pregnancy, in infancy, and in all ages, generally with little inconvenience, being almost always a *slight affection* not worthy of the name of *disease*. It may be practised on a part of a family, without any danger of infecting the rest; and of course it may be introduced into places and towns to any extent, not only without endangering those undergoing the disease, but, from its not being infectious by effluvia, without any danger of communicating it to others who have not had the Small-Pox. And, even at this day, in some places, the Small-Pox being looked upon as a plague, the Inoculation is prohibited under the strictest regulations; but if the advantages of the new Inoculation should be understood by people so circumstanced, it is hardly to be doubted that the Vaccine Inoculation will, on the first breaking out of the Small-Pox, be adopted.

6. No danger is to be apprehended from the interference of the Small Pox; for it has been abundantly proved, that if a person be infected
with

with Small-Pox effluvia previously to the Cow-Pock Inoculation, and the Small-Pox take place at the same time with the Cow-Pock, that the former disease is at least not aggravated by the latter. And there is now good evidence to shew, that variolous-like eruptions never appear, except on those Subjects who previously to the Inoculation for the Cow-Pock had been exposed to variolous effluvia.

7. It has been found that a person, whose constitution has distinctly undergone the Vaccine disease, is in future unsusceptible of the same disorder. Hence no objection can be made to the new Inoculation, as was once urged, on account of its having been asserted, that, by the commutation of the Small-Pox for the Vaccine-Pock, an eruptive disease would be introduced, to which the same person would be repeatedly liable.

8. It does not appear that those who have already gone through the Small-Pox are susceptible of the Vaccine disease, as was also boldly asserted. Hence no objection can be urged on the score of persons who have
already

already gone through the Small-Pox being liable to a new infectious disease, by the introduction of the Vaccine Inoculation.

9. Experience shews, that there is no reason to apprehend the smallest chance of deformities of the skin from the Cow-Pock Inoculation.

10. The extensive practice of the new Inoculation in the present and the two former years, and the accounts of the disease in the casual way, do not shew that any other will be excited subsequently, which is peculiarly imputable to the new practice.

It may be useful to add, that the present Institution is perfectly suited for procuring evidence to inform those who are unacquainted with the new practice; for determining all doubtful points relating to it, and for discovering errors; as every case will be registered; every improvement be made under the direction of the Medical Establishment belonging to the Institution; and the results of the practice will be reported to the Governors.

From the above comparative statement, it is manifest that it is highly to the interest of the Public to adopt universally the Inoculation of the Vaccine-Pock in place of the Small-Pox. And that the poorest ranks in society may enjoy the benefit of the new Inoculation, the following Plan of an Institution is submitted to the consideration of benevolent persons; and it is hoped that, when the objects are well understood, it will continue to receive such aids as are necessary to its establishment and maintenance.

PLAN

OF THE

VACCINE-POCK INSTITUTION.

1. A Physician, Surgeon, and Apothecary, shall attend every Tuesday and Friday, at One o'clock, to examine, inoculate, and prescribe for the Patients; who shall attend at such times as they shall be directed.

R

2. The

2. The patients admitted to receive the benefits of the Inoculation, shall be those who apply with letters from the Governors; or if fit objects, by merely applying at the Institution.

3. The patients shall be supplied with proper medicines at the expence of the Institution, and, when necessary, be attended at their own houses.

4. Subscribers of Ten Guineas are Life Subscribers, and have the same right as an annual Subscriber of One Guinea.

———— Twenty Guineas, have the same right as an annual Subscriber of Two Guineas.

———— Thirty Guineas, have the same right as an annual Subscriber of Three Guineas.

———— Forty Guineas, have the same right as an annual Subscriber of Four Guineas.

———— Fifty Guineas, unlimited.

———— of not less than One Guinea annually, are entitled to have One Patient constantly on the books.

———— Two Guineas annually, Two Patients.

———— Three Guineas annually, Three Patients.

———— Four Guineas annually, Four Patients.

———— Five Guineas annually, unlimited.

5. The

5. The Subscribers are to be called Governors; they shall possess the power of transacting all the business relating to the management of the Institution; except the Medical practice, which is under the direction of the Medical Officers.

6. The Subscriptions, &c. shall be employed to defray the expences of the Institution.

7. A weekly Committee meet every Tuesday at One o'clock, for transacting the ordinary business of the Institution; and the accounts are to be audited quarterly, by a select Committee of Governors, on the first Committee-day after every Quarter-day.

8. The medical duties are discharged gratuitously by the Medical Establishment, who are required to be also Subscribers.

RECOMMENDATORY LETTER.

“ Gentlemen,
“ I recommend the Bearer
of the Parish of believing h to be a
proper Object of the Institution.
Day of 180

Your humble Servant,

“ To the Medical Committee,
Vaccine-Pock Institution,
No 44, Broad-street, Car-
naby-Market.” }

FORM OF BEQUEST

For such as choose to become Benefactors, by
their last Will, to this Institution.

“ ITEM, I give and bequeath unto A. B. and C. D.
the sum of upon trust; and to
the intent that they, or one of them, do pay the same
to the Treasurer, for the time being, of a Society
now called and known by the name of THE VACCINE-
POCK INSTITUTION, commencing December 2, 1799,
in Warwick-street, removed to No. 5, Golden-square;
and now at No. 44, Broad-street, Carnaby-market;
which said sum of I will and desire
may be paid out of my Personal Estate, and applied
towards carrying on the designs of the said Charitable
Institution.”

An account of the Patients inoculated, and of the disbursements and funds of the Institution, may be seen on the Committee-days, which are every Tuesday at One o'clock.

Governors are desired to observe the following Articles:

1. Recommendations are to be delivered on Tuesdays and Fridays, between Twelve and One o'clock, and none will be received after One.

2. Patients to attend regularly on the above-mentioned days, until discharged.

3. Applications for matter to be made on those days, at or before One o'clock.

It is presumed, that among other beneficial consequences, the utility of this Institution must be manifest, from its keeping up a constant succession of Vaccine matter, by which means Practitioners in the country may be supplied at all times: but as the Institution has been hitherto supported by Voluntary Contributions, it is hoped that the utility of it will be a sufficient apology for proposing, that Practitioners, if agreeable, become Subscribers,

to be supplied with matter; or by a contribution of not less than half-a-guinea when matter is wanted.

Note, Vaccine Matter is not warranted, but under the seal of the Institution, with the motto "Feliciores inserit."

MEDICAL ESTABLISHMENT,

PHYSICIANS,

GEORGE PEARSON, M.D. F.R.S. | THOMAS NELSON, M.D.
LAWRENCE NIELL, M.D. |

CONSULTING SURGEONS,

MR. KEATE, F.R.S. | MR. THOMPSON FORSTER,
MR. PAYNE, |

SURGEONS,

MR. ROBERT KEATE, | MR. CARPUE,
MR. GUNNING, |

VISITING APOTHECARIES.

MR. BRANDE, | MR. EVERARD BRANDE.
MR. RIVERS, |

Subscriptions and Benefactions received at Messrs. DEVAYNES, DAWES, NOBLE's and Co. Pall-Mall; and by the Secretary, at the Institution; who will call on the Governors, when their Subscriptions become due.

DIRECTIONS

FORMULA OF THE REGISTER SHEETS OF THE VACCINE INSTITUTION.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Name and Date.	Age.	Food and Drink.	Source of the matter.	Number and kind of punctures.	State of Health.	State of the arms to the 4th day inclusive.	State of the constitution to the 4th day inclusive.	State of the arms from the 4th to 8th day inclusive.	State of constitution from 4th to 8th day inclusive.	State of the arms from 8th to 11th day inclusive.	State of the constitution from 8th to 11th day inclusive.	State of the arms from 11th to 15th day inclusive; and further.	State of the constitution from 11th to 15th day inclusive; and further.	Medicines.	When inoculated for Small-Pox, and the effects of this inoculation.	Miscellaneous Remarks.
April 10th, 1853. No. 1009. Charles Tyndal.	10 months.	At the breast. Mother eats animal food, and drinks 1 pint of port wine daily.	From No. 7450, 8th day.	Both arms; Right by puncture; Left by scratch.	Good, but sometimes eruptions of tough rash.	Right arm taken; Left doubtful, which re-inoculated from No. 7458, 8th day.	A little cough, and diarrhoea.	Small well-defined vesicle on right arm. Left taken by 2d inoculation. Inoculated 3d time each arm.	Quite well.	Vesicle of right arm beginning to flake; that of left, about half the size, beginning also to flake. Former surrounded by erythematous areola; latter has no areola. Red spots from 3d inoculation.	Pain of one shoulder since yesterday, and of arm-pits to-day. Head-ach. Refusal of food, pulseless and flushings alternately, heat of skin on 9th day, but now well.	Two fine glossy prominent blackish foci, one round, other oval, from 11th and 12d inoculation. Spots from 3d inoculation, as before.	Remained well.	15th day, one of Phosphate of Soda for the mother every other day for 3 times.	30th April, foci fallen off, and left a cicatrix in each arm. Inoculated for Small-Pox in each arm, which produced two red punctures, as after 3d inoculation.	Small-Pox in the hands where the child lived, for week before and during inoculation.

DIRECTIONS FOR THE INOCULATION,

AT

The Vaccine-Pock Institution,

FOUNDED DECEMBER, 1799.

I. THE limpid matter should be taken from a decidedly characterized Cow-Pock, which is proceeding, apparently, through its respective stages. It is most efficacious in producing the Vaccina from a Pock before the eleventh or twelfth day; and is most abundant and, is usually taken, about the ninth day. But it may be used at any earlier period, even as early as the fifth day, if it can be collected. However, matter from a pock later than the eleventh or twelfth days is not more liable to produce inflamed arms, than that from younger pocks; and if the Cow-Pock be excited at all, it is as distinct as from any earlier matter. No differences in the effects of the Vaccine matter inoculated appear to depend on the presence, extent, or absence of the red areola.

II. The matter is usually taken on glass, thread, or a quill, on which it should be suffered to become dry without applying heat, and when so dried, it is scarce visible. The air should be excluded, by keeping the matter between two glass plates, in a hole drilled in the middle of one of them, or in a bottle filled with hydrogen gas.

III.

III. As dried matter fails much more frequently to excite the Vaccina than recent fluid matter, it will be adviseable, in order to insure the effect, or for obtaining a great quantity of matter, that, instead of a single puncture or scratch (which is sufficient and preferable with recent matter) there be matter inserted in two punctured or scratched parts in each arm. The dried matter, at the time of Inoculation, should be softened by warm, but not very hot water.

IV. The Inoculation must be performed in the same manner as for the Small-Pox.

V. If the infectious matter produce the required effect, in three, four, or five days, there will be seen a red spot like a small gnat bite—in six or seven days, a small vesicle will appear—in nine days, a circular vesicle (improperly called a pustule) will be found as large as a pea, or from about two-tenths to four-tenths of an inch diameter, usually surrounded by a red Areola.—By the eleventh day, the vesicle begins to scab or grow dry, and turn black in the middle, and the Areola becomes more extensive.—By the fifteenth day, but often later, the pock becomes a mere scab, circular, prominent, well defined, of a blackish or mahogany colour, adhering firmly; but the Areola disappears. Unless it be separated by violence, the scab does not fall off, in general, sooner than the twentieth day. It then leaves a cicatrix permanent for life.

VI. If the eruption, or pimple, excited by Inoculation, has not the characters and does not pass through the stages in the course above stated (V), although sometimes anomalous,

us, this Cow-Pock may render the constitution unfusceptible of the Small-Pox, yet it cannot be depended upon. In such cases, the Inoculation should be re-instituted; for if the Vaccina cannot be again excited, the unfusceptibility desired will have been produced; but if a further proof be wanted, recourse must be had to Inoculation with the variolous matter.

VII. In many cases, no constitutional affection or fever can be perceived: when it occurs, it is almost always on the ninth and tenth days; but provided the pock exhibit the distinctive characters of the Cow-Pock, even without Areola, with the usual course of its stages, the fusceptibility of the Small-Pox will be as effectually destroyed as if there had been considerable febrile affection, and extensive Areola.

VIII. When Erythema, like Erysipelas, extended over the arm, with swelling, pain, &c. it has always subsided in a few days of itself, only avoiding irritating applications, or at most on using sedatives.

IX. Eruptions sometimes occur, but they require no particular treatment.

X. The Small-Pox may break out at any period within twelve days of Inoculation for the Cow-Pock. If they appear earlier than the sixth or seventh, the Vaccina is cut off in its progress; if they appear later, the Vaccine-Pock goes forward in its usual course.

XI. The medical treatment which may be required from unusual or supervening complaints, being analogous to that in the Small-Pox, must be accordingly.

XII. Measles, Chicken-Pox, Hooping Cough, and other disorders, may intervene during the Vaccina, without, in general, varying its progress.

Note, Each Governor may be supplied with matter as often as wanted for his own use, by paying not less than One Guinea annually, the expence of postage and portorage being discharged by those who apply.— If matter be required by those who are not Governors, the plan of the Institution proposes the payment of not less than Half-a-guinea; but if circumstances render this payment inconvenient, it will be supplied gratuitously.

The Institution does not warrant any matter but that which has on the package, the impression of the seal of the Institution, *namely*, a Cow, with the motto, *Feliciores inferit*.

NOTE.

NOTE.

IT may be proper to notice, that although it was deemed the easiest and most independent way to ask, or indeed (for the most part) rather to propose to those, who frequently required matter for Inoculation, to become Governors, for the small consideration above stated; and to those who only occasionally required matter, also to contribute a still smaller sum, (as in other similar Institutions); yet, as far as we know, it has constantly been the rule to supply matter *gratuitously* for mere charitable purposes, and for experimental inquiries; besides furnishing it also gratuitously whenever there was reason to believe any payment might be in the least inconvenient. Whether this mode of assisting in the support of the establishment was not more easy for the public, and more liberal in the Institution, than by artful representations and practices, and canvassing, by personal applications, to obtain comparatively large sums to those for this Institution, we must refer to the determination of the public. In the mean time it will be for ever honourable to this Institution, that its small funds have been solely appropriated to its æconomical expences; neither salary nor premium has been received by any of the medical establishment; and that for more than three years, they furnished the world with matter, and inoculated all the poor who applied, and many of a different order, whether they attended with or without letters from Governors. It is presumed, that the Vaccine-Pock Institution can assert, with the strictest truth, that *so much good has rarely, if ever, been done at so small an expence.*

GOVERNORS.

NOTE—Subscribers of more than One Guinea are distinguished in the List of Governors as follows: A Subscriber of Two Guineas, thus | before his name; a Subscriber of Three Guineas, thus †; a Subscriber of Four Guineas, thus ‡; a Subscriber of Five Guineas, thus §; a Life Subscriber of Ten Guineas, thus *; and for every Ten Guineas more, an additional Star.

ALVANLEY, Rt. Hon. Lady

Adam, Mr.

Amial, Mr.

Andrews, Mr.

**§ Army, War-Office

Atkinson, Mr.

Buccleuch, Her Grace the
Dutcheſs of

*Banks, the Right Hon. Sir J.

Bt. K. B.

*Baker, Sir George, Bart.

*Beechy, Sir William

Bamford, Mr.

Bannerman, Dr.

Barclay, Mr.

Barton, Mr.

Beale, Mr.

Best, Mr.

Beugo, Dr.

Bingley, Mr.

*Binny, Mr.

Birch, Mr.

Birkhead, Mr.

Blaine, Mr.

Bliss, Mr.

Bracken, Rev. Mr.

Brande, Mr.

Brande, Mr. E.

Bremeyer, Mrs.

Broderick, Hon. Miſs

Brouncker, Mr.

Brown, Mr.

Bontein, Sir James

Boone, Mr.

*Boſville, Mr.

Burke, Mr.

Byham, Dr.

***** Cholmondeley, the Rt.

Hon. the Earl of

*Cairns, Dr.

Camel, Mr.

Carpue,

Carpue, Mr. J. C.	Down, Mr.
Carr, Mr.	Douglass, Mr.
Carus, Mr.	
Cates, Mr.	*E. Hon. Mr.
Chapman, Mr.	Evans, Mr.
Chevalier, Mr.	
Cheveley, Mrs.	Farquhar, Sir Walter, Bart.
Chilver, Mr.	Fallowfield, Mr.
Clarke, Dr.	Fellowes, Dr.
Clifton, Mr.	Fisher, Rev. Dr.
Clayton, Mr.	Flower, Dr.
Coleman, Professor	Foot, Mr.
*Commissioners for Sick and	Forbes, Mr.
Wounded Seamen	Ford, Mr.
Cooke, Mr.	Foster, Mr. Oswald
Coombe, Mr. J. D.	Forster, Mr. Thompson
Corbyn, Mr.	Fowler, Mr.
Coxwell, Mr.	Fox, Mr.
Crawforth, Mr. H.	Freake, Mr.
	Frederick, Mrs.
Devonshire, Her Grace the	Frogley, Mr.
Duchess of	Furnival, Mr.
*De Salis, Rev. H. J. D.D.	
*Devaynes, Mr. M. P.	Gaitskell, Mr.
Darcy, Rev. John	Gale, Mr. T. W.
Day, Mr.	Gaskell, Mr.
De Bruyn, Mr.	Gillham, Mr.
Dent, Mr. Robert	Gilpin, Mr.
Dickenfon, Mr.	Goldsmith, Mr.
Dimfdale, Mr. John	Goodwin, Mr.
Donovan, Mr.	Griffin, Mr.
Doratt, Mr.	Grover, Mr.

Gunning,

- | | |
|----------------------------|------------------------------|
| Gunning, Mr. | Kelly, Mr. |
| Hampden, Rt. Hon. Viscount | Kelson, Mr. |
| Hill, Sir Richard, Bart. | Key, Mr. |
| Harness, Dr. | Kidd, Dr. |
| Harrison, Dr. | Kingston, Mr. |
| Hastings, Mr. | Kinglake, Mr. |
| Hawkins, Mr. | Kitching, Mr. |
| Haworth, Dr. | Knapp, Mr. |
| Hayes, Mr. | Kramer, Mrs. |
| Haynes, Mr. | *Lee, Rev. Sir George, Bart. |
| Heavyside, Mr. | Lachlan, Mr. |
| Heberden, Dr. | Lane, Mr. |
| Henderfon, Mr. | Leland, General |
| Hobson, Mr. | Lempriere, Dr. |
| Hodgson, Mr. | Lettsom, Dr. |
| Holt, Mr. | Lewthwaite, Mr. |
| Holwell, Dr. | Livingston, Professor |
| Hughes, Mr. H. D. | Locock, Mr. |
| Humby, Mr. | London, Mr. |
| Ives, Mr. | Macartan, Dr. |
| Jackes, Mr. | M'Donald, Mr. |
| Johnston, Mr. | Mackie, Dr. |
| Jones, Mr. | Mackinder, Mr. |
| Jones, Mr. | Mainwaring, Mr. |
| Jones, Mr. | Malden, Mr. |
| Knox, Hon. George | Marshall, Mr. |
| Kale, Mr. | Marshall, Dr. Andrew |
| *Keate, Mr. | Martin, Mr. M. P. |
| Keate, Mr. R. | Martin, Mr. Patrick |
| | Matthias, Mr. A. |

Maxwell,

Maxwell, Mr.
 Merriman, Mr. S.
 Michael, Mr. Joseph
 Millington, Mr. L.
 Millington, Mr.
 Mingay, Mr.
 Morgan, Mr.
 Morrah, Mr.
 Morrison, Mr.
 Moser, Mr.
 || Muschett, Mr.

Nelson, Dr.
 Newnham, Mr.
 Nicholls, Mr.
 Nield, Mr.
 Nihell, Dr.
 Noble, Mr.
 Norman, Mr. George
 Northey, Mr.
 Norton, Mr.

Ogilvie, Mr.
 Ogle, Mr.
 Osborn, Mr.

Petre, Rt. Hon. Dowager Lady
 *Petre, Right Hon. Lord
 Pufey, Hon. Philip
 Parr, Dr.
 Parker, Mr.
 *Payne, Mr.

*Pearson, Dr.
 Pemberton, Dr.
 Penrose, Mr.
 Pennington, Mr.
 Phillips, Mr. John
 Phillips, Mr.
 Pilliner, Mr.
 Plimer, Mr.
 Pope, Mr.
 Porter, Mr.
 Pratt, Mr.
 Price, Mr.

Rees, Dr.
 Revans, Mr.
 Reynolds, Mr.
 Reynell, Mr. Leatherhead
 Reynell, Mr. H.
 Rhodes, Dr. A.
 Riddlefden, Mr.
 Ridge, Mr.
 Rivers, Mr.
 Robinson, Dr.
 Rodwell, Mr.
 Rogers, Dr.
 Rogers, Mr.
 Rogerfon, Dr.
 Rollo, Dr.
 Rowley, Dr.
 Rumsey, Mr.
 Rumsey, Mr. H.
 Ruspini, Chevalier

Rye, Mr.

Spencer, Rt. Hon. Countess of

Spencer, Right Hon. Earl

Sefton, Right Hon. Lord

Sinclair, Sir John, Bart.

Salkeld, Mr.

Sandford, Mr.

Scott, Nelson, Dr.

Seares, Mr.

Serjeant, Mr.

Settaro, Mr.

Shaw, Mr.

Smith, Mrs.

Smith, Mr.

Smart, Mr.

Sneath, Mr.

Southam, Mr.

Squirrel, Dr.

Stodart, Mr.

§ Stratton, Mr.

Stubbs, Mr.

Sutherland, Mr.

Symmons, Mr.

Tegart, Mr.

Thomson

Thomas, Mr.

Thynne, Dr.

Tilloch, Mr.

Travers, Mr.

Tubbs, Mr.

Vaughan, Mr.

Vincent, Mr.

Voet, Dr.

Von Oven, Mr.

Wainewright, Mr. T.

Walker, Mr.

Walker, Mr. R.

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