

Reports of a series of inoculations for the variolae vaccinae, or cow-pox : with remarks and observations on this disease, considered as a substitute for the small-pox / by William Woodville.

Contributors

Woodville, William, 1752-1805.
Royal College of Surgeons of England

Publication/Creation

London : Printed and sold by James Phillips and Son, [1799]

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SERIES OF

VARIOLA

COV

REMARKS AND
DISEASE, CONSIDERED

SMALL

By WILLIAM V
PHYSICIAN TO THE SMALL

PRINTED
By JAMES
GEORGE-PARK

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R E P O R T S

OF A

SERIES OF INOCULATIONS

FOR THE

VARIOLÆ VACCINÆ,

OR

COW-POX;

WITH

REMARKS AND OBSERVATIONS ON THIS
DISEASE, CONSIDERED AS A SUBSTITUTE FOR

THE

SMALL-POX.

By WILLIAM WOODVILLE, M. D.

PHYSICIAN TO THE SMALL-POX AND INOCULATION HOSPITALS,

London :

PRINTED AND SOLD BY

James Phillips and Son,

GEORGE-YARD, LOMBARD-STREET.



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OR

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BY WILLIAM WOODVILLE, M.D.

PHYSICIAN TO THE INFIRMARY AND INOCULATION HOSPITAL,

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TO

THE RIGHT HONOURABLE

SIR JOSEPH BANKS, BART.

KNIGHT of the BATH,

PRESIDENT OF THE ROYAL SOCIETY, &c. &c. &c.

SIR,

THE great attention with which you honoured some of the first cases described in the following sheets, has induced me to hope, that an account of the whole, though not affording the satisfactory evidence upon the subject that I expected, may still not be entirely unacceptable to you.

I have the honour to be,

With the utmost regard,

Your obedient Servant,

W. WOODVILLE.

ELY-PLACE,
MAY 16th, 1799.

70
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ELY PLACE,
MAY 18th 1791

REPORTS, &c.

LAST Summer Dr. JENNER presented to the public * several curious and interesting facts, respecting a disease known to dairy farmers by the name of Cow-pox. The most important of these is, that persons who have been affected with this distemper are thereby rendered as secure from the effects of the variolous infection as if they had actually undergone the Small-pox.

* See an Inquiry into the causes and effects of the Variolæ vaccinæ, a disease discovered in some of the Western counties of England, particularly Gloucestershire, and known by the name of the Cow-pox.

However extraordinary this circumstance may appear, it is supported by numerous experiments made under Dr. Jenner's inspection, and also by concurrent testimonies since collated by Dr. Pearson, † who with much laudable zeal and industry instituted a farther inquiry into the subject.

Dr. Jenner, who from his situation, in Gloucestershire, had many opportunities of seeing the Cow-pox, supposes it to originate from the matter of the grease in horses, and to take place in the following manner:

“ In this dairy-country a great number of cows are kept, and the office of milking is performed indiscriminately by men and maid servants. One of the former having been appointed to apply dressings to the heels of a horse affected with *the grease*, and not paying

† See an Inquiry concerning the history of the Cow-pox.

due attention to cleanliness, incautiously bears his part in milking the cows, with some particles of the infectious matter adhering to his fingers. When this is the case, it commonly happens that a disease is communicated to the cows, and from the cows to the dairy-maids, which spreads through the farm, until most of the cattle and domestics feel its unpleasant consequences. This disease has obtained the name of the Cow-pox. It appears on the nipples of the cows, in the form of irregular pustules. At their first appearance they are commonly of a palish blue, or rather of a colour somewhat approaching to livid, and are surrounded by an erysipelatous inflammation. These pustules, unless a timely remedy be applied, frequently degenerate into phagedenic ulcers. The animals become indisposed, and the secretion of milk is much lessened. Inflamed spots now begin to appear on different

parts of the hands of the domestics employed in milking, and sometimes on the wrists, which quickly run on to suppuration, first assuming the appearance of small vesications, produced by a burn. Most commonly they appear about the joints of the fingers, and at their extremities; but whatever parts are affected, if the situation will admit, these superficial suppurations put on a circular form, with their edges more elevated than their centre, and of a colour distantly approaching to blue. Absorption takes place, and tumours appear in each axilla. The system becomes affected — the pulse is quickened; and shiverings, with general lassitude and pains about the loins and limbs, with vomiting, come on. The head is painful, and the patient is now and then even affected with delirium. These symptoms, varying in their degree of violence, generally continue from one day to three or four, leaving ulcerated
fores

fores about the hands, which, from the sensibility of the parts, are very troublesome, and commonly heal slowly, frequently becoming phagedenic, like those from whence they sprung."

" Thus the disease makes its progress from the horse to the nipple of the cow, and from the cow to the human subject."

Since no fatal effects have ever been known to arise from the Cow-pox, even when impressed in the most unfavourable manner; and since this disease appears from numerous instances to leave the constitution in a state of perfect security from the infection of the Small-pox, Dr. Jenner infers, that the employment of the matter of Cow-pox would be preferable to that of the Small-pox, for the purpose of inoculation. In confirmation of his opinion, it may be observed, that he relates the cases of seven or eight persons whom he

succes-

successfully inoculated with this new antidote to the variolous poison.

Possessed of the above information, I confess I became very anxious to try the effect of inoculating the matter of this singular disease; and as trials could be made not only with safety, but also with the prospect of advantage, I conceived it to be a duty that I owed to the public in my official situation at the Inoculation Hospital, to embrace the first opportunity of carrying the plan into execution.

Unfortunately, however, at the time Dr. Jenner's publication appeared, no Cow-pox matter could be procured, for the disease had then become extinct; nor was it expected to return till the spring, the period at which it usually affects the cows. But conceiving that the distemper might be produced by inoculating the nipples of cows with the matter of the
grease

grease of horses, in conformity with the opinion above-stated, I proceeded to try whether the Cow-pox could be actually excited in this manner.

Numerous experiments were accordingly made upon different cows, with the matter of grease, taken in the various stages of that disease, but without producing the desired effect: my friend, Mr. Coleman, the ingenious Professor at the Veterinary College, likewise made similar trials, which proved equally unsuccessful.* Neither were inoculations with this matter, nor with several other morbid secretions in the horse, productive of any effects upon the human subject.

I am aware, that the experiments I allude to, may, by some, not be deemed wholly con-

* Mr. Coleman caused one of his cows to be inoculated in its teats with Cow-pox matter, and with that taken from a variolous pustule, without effect; but the former matter, after being regenerated by the human subject, produced the disease in the cow.

clusive,

clusive, from a supposition that the peculiar predisposition of the cows, necessary to render the inoculations efficient, might not exist at the time the matter was applied to their nipples. But I have also other reasons for believing that the Cow-pox does not originate from any disease of the horse. In the first place, the affirmative opinion is confessedly gratuitous: a horse, at a certain season of the year, becomes affected with the grease, and the cows about the same time are affected with Cow-pox; and from this coincidence the two diseases have been considered as cause and effect. Yet is it not equally probable, that the same temporary causes which produce a certain disorder in one animal, may so operate upon another animal of a different genus as to excite another disorder? Therefore, though the Cow-pox may break out among the cows at the time that the grease affects the

horses,

horses kept on the same farm, yet the consecutive appearance of these diseases, affords no proof of their connexion: while on the other hand I can adduce instances, in which the former disease has broke out under such circumstances as render it highly improbable, if not impossible, that it should have been caused by the latter.*

But though Dr. Jenner seems to have been misled with respect to the origin of the Cow-pox, still his facts and observations concerning its effects upon mankind are not the less valid and important; nor did I feel the less desirous to try how far they would be invalidated or confirmed by a more enlarged experience than he had the opportunity of acquiring.

Towards the latter end of January last I was informed that the Cow-pox had appeared

* Those who wish for further information on this subject, may consult Mr. Simmons's *Experiments*, and Dr. Pearson's *Inquiry*, p. 83. & 84.

among several of the milch cows kept in Gray's-Inn-Lane, and upon examination of these, three or four were discovered to be affected with pustular sores upon their teats and udder. These pustules corresponded in their appearance with the representation and description of the genuine Cow-pox, as given by Dr. Jenner; I should not, however, call the surrounding inflammation erysipelatous; it was evidently an indurated tumefaction of the skin. The number of cows kept at this place was at the time about two hundred, and about four-fifths of them were eventually infected.* The hands of three or four persons became sore in consequence of milking the cows thus affected; and one of them, (Sarah Rice) exhibited so perfect a specimen of the disease, that I could entertain no doubt of its being the true and not the spurious Cow-pox.

* Those cows which were not in milk escaped the disease.

Several gentlemen, who I knew would be highly gratified by seeing the disease as it appeared upon this girl's arm, were invited to meet me at the Cow-house on the following day, when Lord Somerville, Sir Joseph Banks, Sir Wm. Watson, Drs. Simmons, Pearson, Willan, and others, attended. This was on the 24th of January last, and Sarah Rice had then been affected five days. The appearance of the disease upon this girl's hand and arm very much resembled the representation of it given in the first plate of Dr. Jenner's pamphlet. At first a small tumour, or circular vesication appeared between her fingers; next day she discovered three more like the first, viz. one upon her finger, another at the wrist, and also one upon the middle of her fore-arm. The two first never became larger, and exactly resembled the vesicle upon the finger in the plate alluded to; that at the wrist was now about

one-third of an inch in diameter, and the other upon her arm was still larger: they were both of a circular form, not depressed at the centre, and had a simple inflammatory border. The pellicle of both these tumours, but more especially of the larger, had at this time acquired a blue colour, which was deepest about the centre. This blueness had come on during the last twenty-four hours; for I had seen the tumours the preceding day, when this coloured tinge could scarcely be perceived, and that too only in the largest; at that time also it contained a colourless fluid, but now its contents appeared brownish. The girl now perceived an uneasiness at the axilla; and I afterwards learned that this symptom was followed by a slight head-ach. None of the tumours were painful, and they all gradually went off without producing ulceration.

Sarah Rice had undergone the Small-pox
when

when a child; and the only reason why she was more affected by milking the diseased cows than the other milkers were, was, that her hands and arms were more red, swollen, and disposed to chap than theirs; though it does not appear that there were any abrasions of the cuticle of those parts of the skin which were infected by the Cow-pox.

Before relating the cases of inoculation with the matter of Cow-pox, I have judged it proper in the first place briefly to state what are the local effects produced by inoculating variolous matter, so that the progress of the infection in both cases may be compared, and the subject of inoculation at large, be better understood.

In cases wherein inoculation of the Small-pox proves effectual; a small particle of variolous matter being applied by a superficial puncture of the skin, usually produces in the
course

course of three or four days, or sooner, a little elevation of the punctured part, discoverable by the touch, and a red speck distinguishable by the eye. From this time the redness advances in a circular form, more or less rapidly, according to the constitutional circumstances of the patient; and the first effect of this superficial inflammation is the formation of a vesicle upon its centre, which usually appears between the fourth and seventh day after the inoculation. The extent of this vesicle is generally found to bear some proportion to the intensity of the inflammation: and contains a limpid fluid, by the absorption of which, the Small-pox is produced. The vesicle soon bursts, and the central part of the puncture becomes depressed, and often of a dark hue; which appearances, together with the marginal inflammation, continue to increase till the eruptive symptoms

toms subside, when the edges of the depressed part begin to swell with a purulent fluid, and the inflammation gradually recedes.

Thus it appears that the variolous matter, first inserted by the puncture, like that of other morbid poisons, is not capable of being immediately absorbed, but lodges in the skin, and there excites an inflammatory process, by which a new matter, producing the disease, is generated.* It would seem also that this process is carried to a greater or less extent in different persons before the matter enters the absorbents, owing probably to the greater or less aptitude in these vessels to receive it. Hence we find the local inflammation in some cases considerably advanced before the system becomes affected; while in others the eruptive

* In the second Volume of the *History of Inoculation*, (now nearly ready for the press) I have endeavoured to show that the general greater mildness of the inoculated than the casual Small-pox, depends upon this circumstance.

symptoms supervene, when it appears to have made but very little progress, and therefore though the eighth day after the inoculation proves the usual period at which the patient feels indisposed, yet this frequently happens much sooner or later, and the progress of the Cow-pox infection will be found to take the same latitude.

Monday, January 21, 1799, I took the matter of Cow-pox, in a purulent state, from the teats of a cow, with which I immediately inoculated seven persons by a single puncture, in the arm of each, or rather by scratching the skin with the point of the lancet, till the instrument became tinged with blood.

FIRST CASE.

Mary Payne, a child two years and an half old, of a strong robust constitution. 3d day.

The

the inoculated part was evidently elevated, and slightly inflamed—6th day the local tumour extended to about one-third of an inch in diameter, and was nearly of a circular form with its edges more elevated than the centre, and with the surrounding inflammation not greater than is usual in cases of inoculated Small-pox: the vesicle upon the middle of the tumour was now very large, and distended with a limpid fluid; some of which I took upon a lancet, and with it inoculated another person, John Talley. She appeared dull and drowsy; and her pulse was quicker than usual. She had no appetite for food, and had been very thirsty since yesterday. 8th day. The redness surrounding the tumour seems retiring; and the thirst and other febrile symptoms are much abated; but she still appears listless and somewhat indisposed. 11th day. She is perfectly free from complaint: the inoculated part

is scabbing, but surrounded with a hard tumefaction, of a bright red colour. She was this day inoculated with variolous matter. 15th day. She has no ailment. The variolous inoculation produced considerable inflammation, which gradually disappeared after the fifth day.

SECOND CASE.

Elizabeth Payne, aged four months, in appearance weak, and somewhat emaciated. The progress of the infection on this child's arm was very much like that of her sister's just mentioned; but the vesication seemed rather more extensive, and the surrounding inflammation less. The sixth day after inoculation, her mother informed me that the child had been very unwell the preceding night with
 what

what were called inward convulsions, and had vomited two or three times. On examination, the heat of her skin, and the frequency of her pulse, indicated the presence of some degree of fever. 8th day. I learned that the febrile state had continued, more or less, till this morning; nor was it then wholly gone off. The inoculated part, I judged from its appearance, had not entirely ceased from disordering the constitution. 11th day. The redness of the tumour is subsiding, and its general appearance resembles the effects of inoculation with variolous matter when the eruption is completed, and the maturation proceeding favourably. The patient's mother now thinks her as well as usual. She was this day inoculated with variolous matter. 13th day. She manifests no signs of indisposition. The redness about the tumour is gone off, and the matter is forming a scab. The second inoculation

produces no effect. 15th day. She is now very well; but her mother says she was seized with inward convulsions yesterday, and was extremely ill afterward for two hours: this, however, cannot be justly ascribed to inoculation, as the part in which the Cow-pox matter was inserted is now covered with a dry scab, not attended with inflammation; and the variolous matter produced no redness whatever. She was this day brought to a man labouring under the casual Small-pox, and kissed by him, in order more fully to try if she was secure from the infection of the Small-pox. Her sister, Mary Payne, was also subjected to the same test, but neither of them have since taken the disease.

THIRD

THIRD CASE.

Thomas Buckland, a strong child, four months old.—The progress of the infection on this boy's arm was even more regular, and produced appearances more analogous to those of the inoculated Small-pox than in the case of Mary Payne. The vesicle on the inoculated part formed on the third day, and the surrounding inflammation never became phlegmonous, nor was attended with any hardness of the integuments. 7th day. In the evening, he was discovered to be feverish and restless, when two pustules, exactly resembling those of the Small-pox, appeared near to the inoculated part. The following day he still continued indisposed, and the cutaneous inflammation had that peculiar irritable or angry aspect which is observable on the accession of the eruptive symptoms in cases of inoculation

with

with variolous matter. 10th day. The sup-
puration was more extended, and the efflor-
escence immediately encompassing it, had
nearly disappeared, leaving its outer border
more strongly marked than the inner; a cir-
cumstance of the most favourable import in
inoculation. The two pustules upon his arm
were more advanced, and several others were
now visible upon different parts of his body:
his ankles and feet were beset with a rash
like the scarlatina. He is still feverish, and
his mother reports, that last night he vomited.

11th day. The foreness of his arm, and the
fever had ceased. Nine distinct pustules were
now discovered upon his body and limbs,
somewhat smaller than variolous pustules: from
one of these I obtained an ichorous matter,
and with it inoculated Sarah Price. 13th day.
The febrile symptoms returned yesterday, nor
is he wholly free from them to-day. Nine

additional

additional pustules have appeared: no inflammation remains at the inoculated part, and the matter it contains begins to dry. 15th day. He is free from disorder: six pustules more have appeared, making in the whole twenty-four, some of them mature at the apex, but they mostly die away without proceeding to suppuration. He was this day exposed to the effluvia of the casual Small-pox, in the same manner as the two Paynes.

FOURTH CASE.

Richard Payne, a healthy boy, ten years old. The inoculated part was not sensibly elevated nor inflamed, till the fourth day. 7th day. The tumour had spread considerably, and the vesication upon it was very evident. He felt a sensation of itching in the part; and the next day complained of a pain

in the axilla, which continued two days. 10th day. The centre of the tumour became depressed, its edges elevated, and surrounded by a deep-coloured inflammatory border. The central part of the tumour was now assuming externally a brown colour, and in a few days afterwards it formed a dark scab. Though considerable tumefaction, with hardness and redness, remained at the inoculated part several days, yet no ulceration ensued. 15th day. Five pustules appeared, resembling those in Buckland. This boy was twice inoculated with variolous matter during the progress of the Cow-pox infection, and exposed to patients under the Small-pox the whole time, without being infected by it; and the only complaint arising from the Cow-pox was the pain in his arm-pit.

FIFTH CASE.

Matthew Redding, sixteen years old. 3^d day. The infertion of the matter did not appear to have produced any inflammation or hardness in the part: he was therefore inoculated with variolous matter, at the distance of two inches from the part in which the Cowpox matter was inferted. Next day, a little redness could be discovered at the first puncture, and from this time both inoculations proceeded very regularly, but slowly, so that on the seventh day they appeared to be inflamed in an equal degree, the extent of the inflammation not exceeding the tenth of an inch in diameter. 8th day.* He has pain in the axilla.

* Here, as well as in the subsequent cases, where the patient was twice inoculated on different days, I date the time from the first inoculation.

10th day. Both tumours are approaching to suppuration. They are of the same form, and attended with an equal degree of efflorescence. 11th day. He complains of head-ach: the red tinge now extends in a circular form, and includes both tumours. 13th day. There appears more tension and pain at the variolous tumour than at the other, but the latter tumour is more prominent. 15th day. Both tumours began to dry, and no inconvenience followed. This boy made no other complaint, during the process of infection, than of uneasiness in the axilla, followed by a slight head-ach, of very short duration: however, on the 17th day, four small pustules appeared, viz. one upon his nose, one upon his thigh, and two on his head; none of which suppurated. This case strikingly resembles that of Richard Payne, in which the pustules did not appear till the arm scabbed.

SIXTH

SIXTH CASE.

Jane Collingridge, a healthy active girl, seventeen years of age. 3d day. The inoculated part began to be elevated and inflamed. 5th day. It was vesicated, and attended with itching. She was now inoculated with variolous matter in the right arm, the former inoculation having been in the left. 8th day. The whole tumour is much increased in all dimensions; its form is perfectly circular, and it appears of a lemon-coloured tint. She now complains of a stiffness across her arms, and of a pain in the left axilla: the puncture in the right arm begins to be elevated and inflamed. 11th day. She complains of head-ach, and pain about the loins: the tumour produced by the Cow-pox matter is now more inflamed at the margin, which is beset with minute confluent pustules: the variolous tu-

mour is also advanced to a state of vesication; and she reports, that last night both axillæ were painful. 12th day. She continues indisposed: the tumour is surrounded by an extensive efflorescence: the variolous tumour is of a deeper red colour. 13th day. The Cow-pox tumour is subsiding, and forming a scab: that of the Small-pox is efflorescent: her head-ach continues: pain in the right axilla: several pustules appear. 15th day. There are small pustules round the edges of the variolous tumour: more pustules appear scattered over the face, body, and limbs. 17th day. The scab over the Cow-pox tumour is completely formed; at its edges, however, a fluid is still visible: the variolous tumour is in a state of suppuration: she complains of a sore throat: the number of pustules is now from one to two hundred, in no respect differing from variolous pustules of the mild fort.

fort. From this time both the tumours gradually healed, and the pustules dried at the usual time.

SEVENTH CASE.

Ann Pink, a tall girl, of a brown fallow complexion, aged fifteen years. This girl was inoculated with variolous matter, on the fifth day, in the same manner as Collingridge, and both tumours proceeded to maturation, though more slowly than in that case. Neither of the tumours began to scab till the seventeenth day, when they resembled each other so perfectly, that the one could not easily be distinguished from the other. She had no pain in either axilla, nor made any complaint during the whole progress of the infection, neither did one pustule appear upon her.

The only other persons whom I first inocu-
lated

lated with the matter of Cow-pox, and on the fifth day afterwards with variolous matter, were William Harris, William Bunker, and James Crouch.

EIGHTH CASE.

William Harris, twenty-one years of age, of a tall and slender make, and of a delicate constitution, was inoculated January 24, with the matter of Cow-pox, taken from the arm of Sarah Rice, who received the disease by milking the cows. 3d day. The inoculated part was evidently elevated and inflamed. 5th day. It advanced to vesication, and a sensation of itching was perceived in the part: he was this day inoculated with variolous matter. 9th day. The tumour of the first inoculation presents prominent callous edges, with but very little redness; its centre is depressed, and contains a lymphatic fluid: he perceives

perceives a tendernefs in the axilla: the variolous tumour is confiderably inflamed and veficated, and itches more than the other. Next day a pain was perceived in the axilla of the arm in which the variolous matter was inferted, as well as in the other. 12th day. rednefs of the Cow-pox tumour is going off; but that of the variolous ftill fpreads with an irregular margin. 14th day. Several puftules appear. The Cow-pox tumour is now dry at the centre, but its furrounding edges appear of a blueifh tinge, and ftill abound with ichorous matter. The variolous tumour is much inflamed, and befet with confluent puftules at its edges: its centre is depressed, and of a dark hue. 19th day. The Cow-pox tumour has formed into a dry fcab, with a finely polished furface, and of a mahogany-brown colour: the variolous tumour is in a purulent ftate, with an extenfive inflammation

inflammation at the margin: the pustules are about 300 in number, very large, and all in a state of maturation. From this time all the effects of inoculation went off gradually: he never complained of head-ach, nor of any febrile symptom during the whole progress of the disease.

NINTH CASE.

Wm. Bunker, a strong healthy boy, fifteen years of age, was inoculated, in his left arm, on the same day, and with matter from the same person as Harris. 3d day. The inoculated part was elevated and reddened. 5th day. The inflammation was much increased: he was now inoculated in his right arm with variolous matter. 8th day. The tumour upon his left arm is much elevated, and the vesication considerable since the sixth day: he now
 complains

complains of pain in the axilla, and of head-ach. The pustule on the right arm advances very slowly. 10th day. The pain in the axilla and the head-ach continue. The tumour of the left arm begins to scab in the centre, and is furrounded with a red tinge of considerable extent. The tumour on the right arm now also presents a red tinge of a similar appearance, but not of half the extent: its centre is in a state of vesication, and its edges studded with small pustules: his head-ach is not entirely gone off. 12th day. The red tinge furrounding the tumour on the left arm has disappeared, except a narrow ring at its outer ambit: the tumour on the right arm is depressed at the centre, where it is also of a livid colour; its edges are hard and inflamed: he now discovers two or three pustules upon his body. 17th day. The matter of both tumours is almost wholly

formed into a dry incrustation: no more pustules have appeared: one upon his hip has matured. 20th day. Both tumours are perfectly scabbed; that upon his left arm appears browner and smoother than the other.

TENTH CASE.

James Crouch, seven years old, inoculated on the same day as the last patient with matter taken from the same girl, and with variolous matter five days afterward. 5th day. The inoculated part was considerably elevated and inflamed. 9th day. The Cow-pox tumour is much advanced: the pellicle filled with ichor: the marginal inflammation not considerable: the variolous puncture now displays a small red speck, which begins to spread. 11th day. The Cow-pox tumour exhibits an extensive efflorescence, or red stain, upon
the

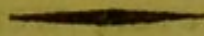
the surrounding skin, and its centre begins to dry: the variolous tumour is spreading a little, and in a state of vesication. 14th day. Pain in the axilla is now produced by the Cow-pox tumour, which is drying at the centre: the variolous tumour is now efflorescent, but not to half the extent of the other. From this time the tumours quickly healed, no eruption took place, and no farther inconvenience was experienced.

ELEVENTH and TWELFTH CASE.

Thomas Fox, aged twenty-five, and John Dennis, twenty-three years of age, both strong men, and accustomed to hard labour, were inoculated on the 22d of January, with variolous matter, and on the following day with Cow-pox matter, taken from the arm of Sarah

Rice. In both these cases, the first inoculation was performed by two punctures at the distance of two inches from each other, and the latter by one puncture at the same distance from the two former. The local effects and appearances of the inoculation were very similar in both these men: the Cow-pox tumours seemed to advance equally with those of the variolous, and bore a strong resemblance to them; the former, however, were more elevated and circumscribed: for about the ninth day the variolous tumours became angulated or ragged at the margin, which was not so conspicuous in the others, though both had small confluent pustules at their margins. Those of the Cow-pox also sooner healed, and formed a smoother scab. The eruptive fever came on about the eighth day with Dennis, but not till the tenth with Fox: the former had more than 300 pustules, and the latter

latter about 100; all of which were in every respect similar to variolous pustules.



THIRTEENTH and FOURTEENTH CASE.

John Talley, fourteen, and Thomas Brown, fifteen years old, were, January 25th, inoculated with variolous matter in the left arm, and the following day they were both inoculated in the right arm with the matter of Cow-pox, taken from the arms of Mary and Elizabeth Payne, (see cases first and second) The progress of both the infections on the arms of these boys was perfectly regular and equal throughout. On the 7th day all the tumours were considerably inflamed, and in a state of vesication, attended with itching. Brown also at this time complained of a pain in each axilla; but with Talley the pain was confined

fined to the left till the next day, when both
 arm-pits were affected. 10th day. They both
 complained of head-ach, and of pains about the
 loins: these, however, were very slight, and
 no further indisposition ensued. On the even-
 ing of the 12th day some pustules appeared
 upon Brown, but upon Talley they did not
 appear till the 14th day: the former had in
 all about thirty, and the latter only six, all of
 which were apparently variolous. The Cow-
 pox tumours were more elevated at the edges,
 and less depressed at the centre, after the 9th
 day, than those of the variolous; and they
 eventually formed a smoother and browner
 scab, as in the case of Fox and Dennis.

January 30th—William Mundy, Elizabeth
 George, and Sarah Butcher, were inoculated
 by two punctures with the matter of Cow-
 pox, taken from the arm of Collingridge.
 (Case 6th).

FIFTEENTH CASE.

William Mundy, a strong labouring man, aged twenty-five years, was inoculated as above described by two punctures in his left arm. The local infection of both punctures advanced, and the inflammation and its effects proceeded rapidly, so that on the 8th day he complained of uneasiness in his axilla, and of pain in the head and loins, which continued about two days: the tumours were then considerably elevated, and their margins much inflamed. 13th day. They were surrounded with an extensive redness, in the form of an halo, and beginning to scab at the centre: the edges continued circular, well defined, and elevated. 14th day. Several pustules appeared upon his neck and back, but disappeared in two or three days without suppurating. He was this day inoculated with variolous matter

ter, but it produced no other effect than a little redness, of two or three days duration.

SIXTEENTH CASE.

Elizabeth George, a strong woman, twenty-five years old, was inoculated in the same manner, and on the day above mentioned, with Cow-pox matter taken from the same person. The punctures quickly rose, but the inflammation was inconsiderable till the sixth day, when vesication and itching commenced. 9th day. Has no pain in the axilla, but complains of head-ach and pain in the loins. 11th day. Her pains continue; pulse quick; the central pellicle of the tumours is extending, and replete with a watery humour; the margins swollen, and red. 13th day. The same appearances continue. 15th day. The symptoms are abated: says she has no
other

other complaint than a giddiness of the head: the inflammation at the margins of the tumours is greatly abated: the matter in the centre is beginning to dry: some pustules appear on her face. 16th day. She makes no complaint: more pustules shew themselves: the tumours appear circular, with the centre equally elevated as the edges, and exhibiting an uniform smooth surface, which is becoming hard. 18th day. More pustules have appeared: the tumours are scabbing, and the surrounding redness is almost wholly gone. 20th day. Her face is swelled; the pustules are very sore, and in a purulent state; their number is 530, and two in the throat are a little troublesome. 25th day. The pustules in a state of desquamation. She was now inoculated with variolous matter, which produced no effect. The scabs at the inoculated parts were of that brown smooth kind peculiar to the Cow-pox.

SEVENTEENTH CASE.

Sarah Butcher, a healthy little girl, thirteen years old, was inoculated with the matter of Cow-pox, at the same time and in the same manner as above mentioned. 6th day. The tumours were much elevated: the inflammation inconsiderable: the vesication fully formed, and attended with itching. 9th day. There was a slight efflorescence around the tumours: uneasiness in the axilla: head-ach: pain in the loins. 11th day. Suppuration at the inner edges of the tumours: redness at the outer edge very extensive. 14th day. Tumours scabbing: no eruption: complains of pain in her bowels, and diarrhœa. 16th day. No complaint: central part of the tumours scabbed: inflammation still surrounding the edges. She was inoculated this day with variolous matter. 18th day. The redness gone off,

off, leaving a red tinge at its outer margin. The variolous inoculation produced a little redness, which disappeared in two days.

January 31st. Thomas Wife, aged fourteen, and Sarah Price, aged thirteen years, were inoculated with the matter of Cow-pox, taken from Matthew Redding, and at the same time with variolous matter; but the effects of the latter inoculations were the following day prevented by applying the concentrated acid of vitriol to the punctures.

EIGHTEENTH CASE.

Thomas Wife, above-mentioned. 5th day. The inoculated part was considerably inflamed and veficated. 8th day. The tumour advances with much marginal redness; and a pain in the axilla is perceived. 12th day. Pain in the axilla continued two days: he has had no

other complaint: the centre of the tumour is forming a scab, but is surrounded with an appearance like the areola papillæ: two pustules were discovered upon his body this day, and two more appeared on the 15th day, but none of them became purulent: the tumour upon his arm had at that time formed a hard smooth scab.

NINETEENTH CASE.

Sarah Price, inoculated as above stated, in her left arm. On the same day was inserted in her right arm Cow-pox matter, taken from a pustule from Buckland. 5th day. There was a redness and elevation at the two punctures each arm, but, in consequence of the caustic effects of the vitriolic acid, none at the variolous puncture. 8th day. Both tumours were advanced: vesication, and a considerable degree of inflammation, especially in that on
the

the left arm. She now complains of *rigor*, and of a pain in the left axilla. These symptoms, together with a head-ach, continued two days. 13th day. No complaint: both tumours subsiding: three small pustules have appeared upon her face and neck, and two days afterwards three others, none of which suppurated. This girl, as well as Thomas Wife, was constantly exposed to the Small-pox during the progress of their inoculation.

TWENTIETH CASE.

Thomas Dorset, inoculated February 1st with the matter of Cow-pox, taken from the arm of Jane Collingridge, (see case 6th). 7th day. The inoculated part was much elevated, and in a state of vesication, attended with the usual degree of redness. 11th day. Last night he perceived an uneasiness in his
axilla,

axilla, and he now complains of pain about his loins: the tumour encircled by an extensive efflorescence. 13th day. The tumour scabbing at the centre: he was inoculated this day with variolous matter. The variolous inoculation produced no effect. About the 12th day this man had four or five pustular appearances, which he called pocks; but they seemed to me more like common pimples than variolous pustules.

TWENTY-FIRST CASE.

John Keys, twenty-five years old, inoculated February 4, with matter of Cow-pox taken from the arm of James Crouch. On the fourth day the inoculated part was considerably inflamed, and affected with a sensation of itching; but from this time the redness gradually disappeared, and was entirely gone on the ninth day, when he was
 inoculated

inoculated with variolous matter in both arms, but without effect. On the tenth day, however, he complained of pain in his head and loins, with which he was affected three days, but no eruption ensued.

TWENTY-SECOND CASE.

Edward Turner, a strong man, twenty-four years of age, inoculated by two punctures with the matter of Cow-pox taken from the arm of James Crouch (Case 10th) Feb. 5th. 7th day. The tumours were much advanced, in a state of open vesication, and attended with itching. 12th day. They began to dry in the centre, but the margins were of a dark red colour, and studded with minute vesiculæ: he now complains of pain in the axilla, stiffness of his neck, and pain in the loins. 14th day. Head-ach and pain in the loins continue:

tinue: the inner edges of the tumours are distended with an ichorous fluid. 16th day. Complains of head-ach, and sore throat: next day about 100 pustules appeared, many of which were very small. 19th day. He has no complaint: the number of the pustules now amounts to about 220: all of them afterwards suppurated. On the 23d day he was inoculated with the variolous matter, which produced no effect.

TWENTY-THIRD CASE.

Hannah Morgan, a strong child, one year old, was inoculated with the matter of Cow-pox taken from the arm of James Crouch, Feb. 5. 5th day. The inoculated part is much elevated and inflamed. 7th day. The tumour contains ichor, and the redness and elevation are greatly increased: yesterday she became feverish, and last night was sick and vomited:
her

her skin at this time is hotter than usual. 14th day. The febrile symptoms continued, and at times were very severe, till the eleventh day, since which time they have not returned; no pustules have appeared, and the tumour is now scabbing. She was afterwards inoculated with variolous matter, but it only produced a transient redness in the part.

TWENTY-FOURTH CASE.

Jane West, twenty-one years of age, was inoculated Feb. 6th with the matter of Cowpox taken from the arm of Sarah Butcher. 7th day. The inoculated part was considerably elevated and inflamed; the vesication was also extensive, and attended with itching. 9th day. She complained of head-ach, and next day of a pain in the axilla, and upon her shoulder, attended with rigors and shivering;

ing: the border of the tumour appeared of a deep red, and its inner edges contained an ichorous matter. 13th day. Yesterday an efflorescence appeared round the tumour. She complains of a sore throat, and says she has a pain across her chest. 15th day. Two pustules have appeared upon her side: the tumour begins to dry. She makes no complaint. 17th day. Twenty pustules appeared, all of which suppurated. 23d day. The variolous inoculation produced no inflammation.

TWENTY-FIFTH CASE.

Ann Bumpus, aged twenty years, was inoculated Feb. 6, with the matter of Cow-pox, taken from the arm of Sarah Butcher. The appearances of the inoculated part in this girl's arm, corresponded in every respect with those stated in West's case. 8th day.

She

She complained of head-ach. 10th day. Pain of the head and loins; shiverings. 11th day. Two or three pustules appear upon her face. 13th day. Pains continue; more pustules appear. 15th day. No complaint: the pustules were counted and found to be 310, resembling those of the Small-pox. 17th day. Complains of fore throat. 19th day. Pustules drying. 22d day. Inoculated with the matter of Small-pox, but no inflammation was produced by it.

TWENTY-SIXTH CASE.

Thomas Slade, twenty years of age, was inoculated with the matter of Cow-pox, taken from the arm of William Mundy, Feb. 6. On the eighth day the inoculated part was much elevated, and in an advanced state of verification. He complained of head-ach, and pain

in the axilla; and on the next day of a pain in the loins. 11th day. Pains abated, three or four pustules appear; the tumour is bordered with small confluent vesicles. 14th day. No complaints; tumour beginning to scab. 19th day. The centre of the tumour formed a brown hard scab. The pustules do not suppurate, and are receding. 22d day. He was inoculated with the matter of Small-pox, which produced a redness for two or three days, and afterwards gradually disappeared.

TWENTY-SEVENTH CASE.

Frances Jewel, a healthy young woman, twenty years of age, who had undergone the Small-pox by inoculation when a child, was inoculated with the matter of Cow-pox taken from the arm of Sarah Butcher, Feb. 5. The inoculated part advanced into a tumour equal
in

in extent and duration to that in the case last mentioned: on the 9th day, head-ach and pain of the loins came on, and continued two or three days. The tumour began to scab on the 13th day, but no pustules appeared. She was afterwards inoculated with variolous matter, and also with that of the Cow-pox, neither of which produced any inflammation.

TWENTY-EIGHTH CASE.

Charlotte Fisk, four months old, was, on February the 13th, inoculated with the matter of Cow-pox, taken from the arm of Frances Jewel. In this child the local disease proceeded very regularly. She became indisposed on the eighth day, and continued feverish for three or four days, when about forty pustules appeared; but the greatest part of these pustules did not proceed to suppuration. The mother
of

of this child laboured under the natural Small-pox, and was covered with pustules in a purulent state at the time her child was inoculated; yet the infant was suckled by her during the whole course of the disease, and was frequently seen besmeared with variolous pus. Whence it would appear, that the vaccine infection not only prevents but actually supercedes the casual Small-pox.

TWENTY-NINTH CASE.

James Tarrent, nineteen years old, was, on the 16th of February, inoculated with the matter of Cow-pox, taken from a pustule upon Eliz. George. In this case the inflammation at the inoculated part proceeded very rapidly, and was more extensive than usual on the sixth day; but from this time it began to recede, and was entirely gone on the tenth day, only a small dry scab at the puncture being left.

He

He was now inoculated with variolous matter, which did not produce any inflammation whatever. I consider this man as one of the few whose constitutions cannot be affected either by the virus of the Cow-pox, or the Small-pox. It is true he complained of head-ach about the ninth day, but I should not be disposed to attribute this symptom to the inoculation.

THIRTIETH CASE.

William Hull, aged eleven years, was, on the 8th of February, inoculated with the matter of Cow-pox, taken from the arm of Sarah Butcher. 7th day. The tumour at the inoculated part is advanced in the usual manner, and he this day complains of head-ach. 10th day. His head-ach and pain in the loins continue; and several pustules now appear upon him. 12th day. The pains are gone off, and
more

more pustules have appeared. 15th day. The pustules amount to about 200. They vary much in size, and are proceeding to maturation. 18th day. He was inoculated with variolous matter, which produced no effect.

THIRTY-FIRST & THIRTY-SECOND CASE.

February 8th, Hannah Hull, aged thirteen years, and Sarah Hull, eight years old, were inoculated with the matter of Cow-pox taken from Sarah Butcher.

These two sisters had the disease rather more favourably than their brother Wm. Hull, for the inoculated part was in both surrounded by an efflorescence on the 11th day, and the number of pustules upon the two was not equal to that of their brother's, nor were the eruptive symptoms of half the duration of his. On the 20th day they were inoculated for the Small-pox, but no disease ensued.

THIRTY-

THIRTY-THIRD CASE.

George Reed, aged fifteen years, was inoculated with the matter of Cow-pox taken from the arm of F. Jewel, February 14th. The inoculated part tumified in the usual manner: he complained of head-ach on the eighth day, and this symptom continued with occasional intermissions till the 13th day. Some pustules began to appear about the 11th, and the eruption was completed on the 14th day. They were in number about 70, some of which were very small, but they all matured in a favourable manner. He was afterwards inoculated with variolous matter, which formed a pustular appearance; but no disorder was produced.

Frances Pedder, Amelia Hoole, George Hickland, and Elizabeth Morton, were inoculated on February 13th and 14th with Cow-

pox matter taken from the arm of Sarah Price, who was inoculated from a pustule on Buckland, (see case 3d).

THIRTY-FOURTH CASE.

Frances Pedder, a child eleven months old. The inoculated part was gradually elevated and inflamed. 8th day. The eruptive symptoms supervened, and she continued feverish till the 13th day, when several pustules appeared. 16th day. The tumour began to scab, and the number of pustules then upon her was 40, all of which matured without becoming purulent. She was afterwards inoculated for the Small-pox without effect.

THIRTY-FIFTH CASE.

Amelia Hoole, five months old, was inoculated as above described. The local tumour advanced in the usual manner. 7th day. She became feverish, and several small pustules appeared

appeared at the border of the tumour. 10th day. She has continued slightly indisposed since the last report, and nine pustules are now visible upon her body and extremities. 14th day. The pustules amount to 102 in number, and form yellowish scabs. 18th day. The inoculated part was perfectly healed: the pustules appeared in a state of desquamation. She was at this time inoculated with variolous matter, but without effect.

THIRTY-SIXTH CASE.

George Hickland, six months old, inoculated from the person above mentioned. The eruptive symptoms in this child were less severe, and of shorter duration than in the last case. However, the number of pustules which appeared amounted to 300, but only about one-third of them suppurated. This patient also resisted the infection of the Small-pox by inoculation.

THIRTY-SEVENTH CASE.

Elizabeth Morton, nine months old, was more feverely disordered than any of the four children inoculated with the matter taken from Sarah Price. The fever continued with some degree of violence from the 7th to the 15th day, and the number of pustules amounted to 200. On the 20th day she was inoculated with variolous matter without effect.

 THIRTY-EIGHTH CASE.

L. Davy, aged eleven weeks, was, on Feb. 19th, inoculated with the matter of Cow-pox taken from the arm of Charlotte Fisk. This child had the disease very favourably. On the 10th day the tumour was surrounded by an efflorescence, and her skin was a little hotter than usual during that day only. On the 13th day one pustule appeared near to the inoculated part, and two upon her forehead, which
 were

were all she had. She was afterwards inoculated for the Small-pox without effect.

THIRTY-NINTH CASE.

Maria Murrell, aged seven months, was inoculated with matter taken from the same person and on the same day as Davy. 5th day. The inoculated part was much elevated and inflamed. On the evening of the 8th day she vomited. 10th day. The tumour was surrounded by a very extensive efflorescence, and she became hot and restless. 12th day. She seemed free from fever, and about twenty pustules appeared upon her. 14th day. The inflammation upon the arm was gone off, and the pustules seemed to be scabbing. The subsequent inoculation of the Small-pox, as upon the others, produced no effect upon this patient.

A cow,

A cow, kept by Profeffor Coleman, at the Veterinary College, was inoculated in its teat with the matter of Cow-pox taken from the arm of James Crouch, which produced the difeafe in the cow, (fee cafe 10th). A man-fervant, by milking this cow, was alfo affected with an extenfive tumour upon his thumb: this foon acquired a livid blue colour, and was attended with a confiderable degree of fever for feveral days, and with a rafh upon his ankles and feet.

With the matter produced in the nipple of this cow were inoculated Martha Streeton, James Smith, and George Meacock.

FORTIETH CASE.

Martha Streeton, aged twenty-two years, was, on the 18th of February, inoculated with the matter above mentioned. The inoculated part tumified in the ufual manner, and on the

9th day she complained of head-ach, and afterwards of a pain in the axilla. The head-ach and pain in the loins continued, but not with feverity, for five or six days. Pustules began to appear on the 12th, and the eruption was completed on the 16th day, when the number was about 300. During the maturation of the pustules, which in no respect differed from those of the Small-pox, she complained of her throat being sore. On the 19th day this patient was perfectly well. She was afterwards inoculated for the Small-pox without effect.

FORTY-FIRST & FORTY-SECOND CASE.

James Smith, sixteen, and George Meacock, thirty years of age, were, on the 19th of February, inoculated with the same matter as that mentioned in the preceding case. The latter of these patients had the disease nearly
in

in the same manner as Streeton; but in a greater degree, for Meacock's pustules were more numerous, and the inoculated part did not exhibit a tumour so well defined and elevated as Streeton's did. Smith's case differed widely from both; his arm tumified rapidly, and an erythema or blush extended from the puncture several inches up his arm, and down to his elbow. The eruptive symptoms began on the 7th, and continued in a slight degree till the 11th day. He had four or five pustules upon his face, and nearly 100 upon his body and limbs, all of which matured favourably, and the erysipelatous appearance at the inoculated part soon went off, though no application was employed for that purpose.

Both the above patients were inoculated with variolous matter, which produced no effect upon Meacock, but in Smith it was followed by a cutaneous inflammation of several days continuance.

Samuel

Samuel Fairbrother, fifteen years old; Richard Calloway, aged nineteen; James Camplin, aged seventeen years; John Turner, eight months old; Joanna Buckley, five months old; and Mary Welch, three months old, were all, on the 21st and 23^d of February, inoculated with the matter of Cow-pox, taken from the arm of Edward Turner.—See case 22d.

FORTY-THIRD CASE.

Samuel Fairbrother began to be indisposed on the 9th day, and had repeatedly slight feverish paroxysms, with pain in the axilla, till the 14th day, when four small pustules appeared, after which no farther complaint ensued.

FORTY-FOURTH CASE.

In Richard Calloway the inoculated part tumified in the usual manner, and on the 9th

1

day

day he first complained of a pain in the axilla and head-ach, which continued till the 12th day: an extensive bright red blush then surrounded the tumour, and no farther complaint ensued. At this time also some pustules appeared, but their number never exceeded twenty. He had been inoculated in the hand as well as in the arm, in order to discover if the appearance of the tumour in a part constantly exposed to the air would be the same as in the arm kept covered by his dress. The difference was very evident, for the tumour upon his hand was much more extensive, of a more livid colour, and attended with more inflammation than the other.

FORTY-FIFTH CASE.

James Camplin suffered rather more from the eruptive complaints than Calloway, and they continued with him a day longer. However
the

the disease gave him very little uneasiness, and he had only thirty pustules.

FORTY-SIXTH CASE.

John Turner's arm was inflamed very extensively, and he became feverish on the 8th day. The following day many pustules appeared; and on the 11th day he was almost covered with pustules, having about 1000. These, however, were perfectly distinct, and they all matured favourably, so that about the 17th day he was completely well.

FORTY-SEVENTH & FORTY-EIGHTH CASE.

Joanna Buckley and Mary Welch had the disease in its mildest form. On the 8th day an efflorescence surrounded the inoculated part in both these children, and during this day only they appeared a little indisposed. No pustules appeared upon either of them.

All the six patients, thus infected with vaccine disease from E. Turner, were subsequently inoculated with variolous matter, which did not produce any disorder.

February 18th, William Walker, eleven months old; February 24th, Sarah Dixon, nineteen years old; Thomas Ellifstone, aged fifteen months; Maria Dunn, aged twenty months; and James Cummins, aged fourteen weeks, were all inoculated with the matter of Cow-pox taken from the arm of Hannah Bumpus.

FORTY-NINTH CASE.

* William Walker's arm tumified in the usual

• The father of this child is an ingenious engraver in Rosamond Street, Clerkenwell, who having lost a child under the effects of the inoculated Small-pox, was induced to inoculate his only son for the Cow-pox. The particulars of the case are related by Mr. Walker himself, in the Medical and Physical Journal for March 1799.

manner,

manner, but he did not manifest the least indisposition during the course of the infection; neither did any pustules appear, except one or two at the inoculated part.

FIFTIETH CASE.

Sarah Dixon's arm tumified in the usual manner, and on the 10th day she began to complain of a pain in her head and loins; this was followed by shiverings, and a pain in the axilla, and across her shoulders. 13th day. The pains were much abated, and some pustules appeared. 16th day. She makes no complaint, but of a foreness of her throat: the eruption is now completed, and the number of the pustules is found to be 174; all of these afterwards matured.

FIFTY-FIRST CASE.

Thomas Ellistone was feverish from the 6th to the 8th day, when the tumour was surrounded with an extensive efflorescence. After this time he had no ailment. No pustules appeared.

FIFTY-SECOND CASE.

Maria Dunn was hot and restless from the sixth till the ninth day. She had no eruption.

FIFTY-THIRD CASE.

James Cummins did not seem the least disordered from the inoculation, although the inoculated part tumified very considerably, and several pustules appeared at the margin of the tumour on the 11th day.

All the above mentioned persons, inoculated with the matter of Cow-pox, taken from the
arm

arm of Bumpus, have been since inoculated with variolous matter, but without effect.

John Giles, twenty years of age; Wm. Bigg, eighteen years old; William Briaris, sixteen years old; Sophia Dobinson, five years old; Sarah Dobinson, three years old; and Hannah Dobinson, one year old, were inoculated with the matter of Cow-pox, taken from the arm of Jane West, February 21st.

FIFTY-FOURTH CASE.

John Giles complained of head-ach from the 9th till the 11th day. A slight soreness of the throat came on, and continued several days. He had about thirty pustules.

FIFTY-

FIFTY-FIFTH CASE.

William Bigg also complained of head-ach and fore throat several days, and had about twelve pustules.

FIFTY-SIXTH CASE.

Wm. Briaris first complained of indisposition on the 7th, and continued somewhat disordered till the 11th day. Only two pustules appeared.

FIFTY-SEVENTH CASE.

Sophia Dobinson's arm tumified extensively, but she made no complaint during the whole progress of the infection, and had no eruption.

FIFTY-EIGHTH CASE.

Sarah Dobinson's case was in every respect similar to that of her sister Sophia.

FIFTY-NINTH CASE.

Hannah Dobinson suffered as little from the
disease

disease as either of her sisters, till the 14th day, when, according to her mother's report, she was seized with convulsive fits for two or three hours. She had no eruption.

The above six patients have since been inoculated for the Small-pox without effect.

iii Mary Grenville, twenty years old; Edward Honeywood, two years old; Thomas Rood, one year and a half old; Charlotte Mile, fifteen months old; John Jenkins, one year old; Henry Barber, eleven months old; Thomas Dix, eleven months old; Ann Walker, ten months old; Samuel Francis Brough, ten months old; Alexander Towser, eight months old; Wm. Knighton, eight months old; Sarah Price, eight months old; Elizabeth Spilbury, four months old; Elizabeth May, four months old; Mary Ann Sully, three months old; Francis Terry, two months old; Wm. Scott,

two months old; Wm. Johnstone, two months old; and Mary Stewart, two months old, were inoculated with the matter of Cow-pox, taken from the arm of Martha Streeton, on February 25th.

SIXTIETH CASE.

Mary Grenville, on the 9th day, began to complain of head-ach, which continued till the 12th day, when a fore throat came on, and gave her a little uneasiness for about two days. She had 35 pustules.

SIXTY-FIRST CASE.

Edward Honeywood was not perceptibly disordered from the inoculation, although his arm was much tumified; and on the 11th day it exhibited an efflorescence. No eruption appeared.

SIXTY-SECOND CASE.

Thomas Rood was feverish from the 7th
till

till the 10th day, and at the commencement of the fever he had two or three short convulsive paroxysms; but no eruption took place.

SIXTY-THIRD CASE.

Charlotte Mile. A little redness was observed at the inoculated part on this child's arm for two or three days; but this had wholly disappeared on the seventh day, when she was inoculated with variolous matter, which produced the disease in a favourable manner.

SIXTY-FOURTH CASE.

John Jenkins became indisposed on the 12th day, and was very restless for three days. He had about 300 pustules.

SIXTY-FIFTH CASE.

Henry Barber had a slight fever on the eighth
 K 2 day,

day, when symptoms of dentition supervened; but the fever was of short duration. He had but one pustule, and that was upon his upper lip.

SIXTY-SIXTH CASE.

Thomas Dix's arm exhibited an extensive efflorescence on the 11th day, and some evanescent pustules appeared; but he never manifested any indisposition during the progress of the infection.

SIXTY-SEVENTH CASE.

Ann Walker became indisposed on the 9th day, and continued fretful about 24 or 30 hours: the fever then ceased, and she has since been wholly free from disorder. No eruption appeared.

SIXTY-EIGHTH CASE.

Samuel Francis Brough was taken ill on the 9th day with spasmodic paroxysms, succeeded
by

by fever: the former were of short duration, but the latter, with occasional intermissions, continued for three days. 11th day. Some pustules appeared: their number, however, when the eruption was completed, did not exceed twenty.

SIXTY-NINTH CASE.

Alexander Towser was restless and feverish about two days. Ten pustules appeared.

SEVENTIETH CASE.

William Knighton had no eruption. He was a little indisposed between the seventh and tenth days.

SEVENTY-FIRST CASE.

Sarah Price had some indisposition on the 9th day, which terminated in a diarrhœa. On the 13th day she was perfectly well: two pustules were now discovered upon her right foot, which were all she had.

SEVENTY-

SEVENTY-SECOND CASE.

Elizabeth Spilbury was somewhat indisposed on the tenth, and on the fifteenth day; but the latter indisposition was the effect of teething. She had no eruption.

SEVENTY-THIRD CASE.

Elizabeth May was a little feverish on the eighth day, and continued somewhat restless till the 13th day: five pustules appeared.

SEVENTY-FOURTH CASE.

Mary Ann Sully was feverish on the 9th day, and passed a restless night, but on the next morning she was better: she made no farther complaint, and no pustules appeared.

SEVENTY-FIFTH CASE.

Francis Terry became feverish on the 9th day: the next morning a rash appeared, when he seemed to be as well as usual. He had only one pustule.

SEVENTY-

SEVENTY-SIXTH CASE.

William Scott was a little feverish on the eighth day only : no eruption ensued.

SEVENTY-SEVENTH CASE.

William Johnston's arm tumified in the usual manner. He had no pustules, nor did he appear feverish during the course of the disease ; but on the evening of the 13th day, he was thought to be a little restless.

SEVENTY-EIGHTH CASE.

Mary Stewart, like Johnston, was not perceptibly indisposed during the whole progress of the infection, neither had she any pustules.

The above patients inoculated with the matter taken from Streeton, were subsequently inoculated for the Small-pox, without affecting any but Charlotte Mile, in whom the inoculation for the Cow-pox took no effect.

February

February 27th, Joseph Wrench, twenty-four years old; Stephen Peters, nineteen years old; Peter Peters, eighteen years old; Elizabeth Brown, five years old; Mary Shipley, three years old; Margaret Crosby, ten months old; and John Evans, seven months old, were inoculated with the matter of Cow-pox, taken from the arm of James Smith.

SEVENTY-NINTH CASE.

Joseph Wrench continued indisposed from the 10th till the 13th day. An efflorescence appeared at the inoculated part on the 11th day. 15th day. Several pustules appeared, and he now complained of a fore throat, which continued three days. The number of the pustules was thirty.

EIGHTIETH CASE.

Stephen Peters began to complain on the
eighth

eighth day, and continued to be affected with the usual febrile symptoms till the 13th day. He had only one pustule.

EIGHTY-FIRST CASE.

Peter Peter's complaints were similar to those in the preceding case. The efflorescence did not appear till the 11th day. He had 24 pustules, all of which were very small.

EIGHTY-SECOND CASE.

Elizabeth Brown's tumour on the eighth day was surrounded by an efflorescence. She made no complaint, nor had she any eruption.

EIGHTY-THIRD CASE.

Mary Shipley's arm exhibited an efflorescence on the eighth day; but she was not perceptibly indisposed, and had only one pustule.

EIGHTY-FOURTH CASE.

Margaret Crosby had no eruption, nor was she perceptibly ill during the progress of her inoculation. Her arm, however, tumified in the usual manner, and displayed an efflorescence.

EIGHTY-FIFTH CASE.

On John Evan's arm there was an efflorescence on the 6th day, and the following day a slight fever commenced with a spasmodic paroxysm, but he was perfectly well on the ninth, and no eruption took place.

The above five persons have been since inoculated with variolous matter without effect.

Sarah Hat, twenty years old, and Elizabeth Platford, seventeen years old, were inoculated with matter of the Cow-pox, taken from the arm of Maria Murrell.

EIGHTY-

EIGHTY-SIXTH CASE.

Sarah Hat began to complain on the 6th day, and she continued much indisposed till the 11th day, when the tumour was surrounded by an efflorescence, and she made no farther complaint. The number of the pustules which appeared was about forty.

EIGHTY-SEVENTH CASE.

Elizabeth Platford was taken ill on the 9th day, when she complained of pain in the head and loins, with chilliness, &c. : the inoculated part at this time was considerably inflamed: the tumour was circular, but flat, and not surrounded by any efflorescence. 11th day. The pains and shiverings continue: pulse very frequent and weak: tongue white. 13th day. The symptoms still continue: she also complains of pain across her shoulders: some pustules appear. 15th day. She complains of pain in the loins, and of giddiness: the number of the pustules

is much increased. 17th day. The pains continue: she is very weak and faint: her eyes and throat are inflamed and painful: the edges of the tumour are beset with confluent pustules: the pustules upon her face are about 2 or 300, and approach to confluency. 19th day. Her face is considerably swelled, and the pustules are now maturing rapidly. She makes no complaint, but of the soreness occasioned by the eruption. 21st day. Swelling of the face much subsided: the pustules in a state of desiccation. 23d day. She continues recovering. 26th day. She complains of a sore throat, and a cough is troublesome to her. 28th day. The sore throat is almost gone, but the cough continues: pulse 100. 30th day. The cough is still violent. 32d day. The cough is abated, and her appetite improves: from this time she gradually recovered.

Both the above patients were afterwards inoculated

culated with variolous matter which produced no effect.

Isaac Cowling, twenty-three years old; Mary Webb, twelve years old; Sophia Mafon, two years and a half old; and Elizabeth Goodluck, three months old, were, on the 2d of March, inoculated for the Cow-pox, with matter taken from the arm of G. Reed.

EIGHTY-EIGHTH CASE.

Isaac Cowling sickened on the 9th, and the eruptive complaints did not wholly go off till the 14th day. He had about 50 pustules.

EIGHTY-NINTH CASE.

Mary Webb began to complain on the 7th day, and continued feverish for a week. On the 10th day a redness was diffused over the greatest part of her arm, between the elbow and shoulder, and did not wholly disappear till the 14th day. She had about 12 pustules.

NINETIETH

NINETIETH CASE.

Sophia Mafon's arm tumified in the usual way, and exhibited an efflorescence on the 10th day. She had four or five small evanescent pustules, but did not seem indisposed during the course of the infection.

 NINETY-FIRST CASE.

Elizabeth Goodluck was taken ill on the 8th day, when she had a slight spasmodic fit: the tumour at this time exhibited an efflorescence. 11th day. Has had no indisposition since yesterday. No eruption took place.

None of the above three patients took the Small-pox in consequence of inoculation with variolous matter.

 NINETY-SECOND and NINETY-THIRD CASE.

March 3d.—C. S. Cooke, four years old; and A. T. Cooke, two years old, were inoculated with the matter of Cow-pox, taken from the arm of George Meacock.

An

An efflorescence at the inoculated part took place in both these children on the 10th day, but neither of them seemed indisposed from the inoculation, nor did any pustules appear upon them. They were also put to the test of inoculation with variolous matter, but no disease ensued.

March 3d,—A. K. Gunter, one year old; Matthew Sears, nine months old; and Eliz. Giles, nine months old, were inoculated with the matter of Cow-pox, taken from the arm of H. Dobinson.

NINETY-FOURTH CASE.

A. K. Gunter was a little feverish for two days. On the 10th day the tumour was surrounded by an efflorescence, which became very extensive. Only two or three imperfect pustules appeared.

NINETY-

NINETY-FIFTH CASE.

Matthew Sears was indisposed for about four or five days. The tumour was small and angular, nor was it ever surrounded with an efflorescence. He had about 200 pustules.

NINETY-SIXTH CASE.

Elizabeth Giles became indisposed on the 10th day. The tumour had a dark red coloured border without any efflorescence. She had from 70 to 100 pustules.

The above patients have been inoculated with variolous matter without effect.

Richard Scott, two years and a half old;
 Sarah Bennett, one year old; Maria Black,
 one year old; Mary Jenkins, nine months
 old; John Lawyer, eight months old; Eliz.
 King, six months old; William Jones, six
 months old; Esther Phipps, six months old;

Thomas

Thomas Newman, six months old; and Ann Harper, five months old, were inoculated with the matter of Cow-pox, taken from the arm of Elizabeth Brown.

NINETY-SEVENTH CASE.

Richard Scott became feverish for a short time on the tenth day. He had about 14 pustules.

NINETY-EIGHTH CASE.

Elizabeth King's tumour, on the 9th day, was surrounded with an efflorescence. She did not manifest any indisposition, nor had any eruption.

99th,—100th,—and 101st CASES.

The cases of John Lawyer, William Jones, and Sarah Bennett, were similar to that of King.

ONE HUNDRED and SECOND CASE.

Esther Phipps was a little restless and feverish from the 10th till the 13th day, but had no eruption.

ONE HUNDRED and THIRD CASE.

Maria Black became feverish on the ninth day, and was indisposed for two or three days, during which time she had two slight convulsions. Some pustules appeared, but did not suppurate.

ONE HUNDRED and FOURTH CASE.

Mary Jenkins was a little indisposed on the tenth day. She had no eruption.

ONE HUNDRED and FIFTH CASE.

Ann Harper was a little restless during the seventh and eighth night; but no eruption took place.

ONE HUNDRED and SIXTH CASE.

Thomas Newman was feverish from the seventh till the twelfth day; but no pustules appeared.

March 4th, George Paul, three years old, Ann Paul, one year old; Martha Chandler, five months old; Martha Hat, one year old; Eliza. Boardore, seven months old; Samuel Lampart, two years old; Ann Page, one year and a half old; Jane Carter, five weeks old; William New, eighteen months old; Susan Sermon, six months old; Alice Marshall, two years old; Harriot Marshall, four months old; and Frances Henley, five years old, were inoculated with the matter of Cow-pox, taken from the arm of Elizabeth May.

ONE HUNDRED and SEVENTH CASE.

George Paul was not perceptibly indisposed from the inoculation. He had two pustules.

ONE HUNDRED and EIGHTH CASE.

Ann Paul was feverish for about three days, and had forty pustules, all of which were much smaller than those of the Small-pox.

ONE HUNDRED and NINTH CASE.

Martha Chandler's inoculation produced a very extensive efflorescence; but neither fever nor eruption ensued.

ONE HUNDRED and TENTH CASE.

Martha Hat did not become indisposed till the thirteenth day, when a few small pustules appeared.

ONE HUNDRED and ELEVENTH CASE.

Elizabeth Boardore's arm tumified considerably; but neither efflorescence, fever, nor eruption, took place.

ONE HUNDRED and TWELFTH CASE.

Samuel Lampart was somewhat disordered from the 9th till the 12th day, and had three small imperfect pustules.

ONE HUNDRED and THIRTEENTH CASE.

Ann Page was not sensibly indisposed from the inoculation, neither had she any eruption. The tumour was surrounded with an efflorescence on the 12th day.

ONE HUNDRED and FOURTEENTH CASE.

Jane Carter was slightly indisposed from the 7th till the 10th day, and had two or three pustules.

ONE HUNDRED and FIFTEENTH CASE.

William New was ill four days, and had about 100 pustules.

ONE

ONE HUNDRED and SIXTEENTH CASE.

Sufan Sermon was taken ill on the 9th day, when she vomited. She continued feverish till the 12th day. Only five pustules appeared.

117th,—118th,—and 119th CASES.

Alice Marshall, Frances Henley, and Harriet Marshall had no eruption, nor appeared to have any disorder from the inoculation. The local disease, however, was considerable in all these patients, and was attended with an efflorescence.

All the above patients who received the infection from Brown and May, have since been inoculated for the Small-pox without effect.

ONE HUNDRED and TWENTIETH CASE.

Mary Crouch, aged three years, was inoculated with matter taken from one of the
 pustules

pustules upon John Turner, (see Case 46th). A tumour formed at the inoculated part in the usual manner, which was surrounded with an efflorescence; but neither fever nor eruption took place.

121st and 122d CASES.

Elizabeth Wood, aged three years, and Wm. Clifford, two years and a half old, were inoculated with Cow-pox matter, taken from the arm of Mary Stewart, March 4th. Both these children were slightly indisposed about the 10th day, but neither of them had any pustules.

March 6th. The following persons were inoculated with the matter of Cow-pox, taken from the arm of Ann Walker.

Amelia Restieux, four months old; John Bates, six weeks old; Martha Thompson,

two

two years old; William London, three years old; James London, six months old; Frances Wallace, three years old; Joseph Rogers, forty-two years old; Thomas Thoroughgood, fourteen years old; and Ann Thoroughgood, seventeen years old.

123d and 124th CASES.

Amelia Restieux and John Bates, neither experienced any disorder from the inoculation, nor had any eruption; but both their arms tumified in the usual manner.

ONE HUNDRED & TWENTY-FIFTH CASE.

Martha Thompson was feverish from the 8th till the 10th day. She had only one pustule.

ONE HUNDRED & TWENTY-SIXTH CASE.

William London was taken ill on the 10th day, and vomited, but the following day was as well as usual. He had no eruption.

ONE

ONE HUNDRED & TWENTY-SEVENTH CASE.

James London had no perceptible disorder; and no pustules appeared. On the 10th day the tumour was surrounded with an efflorescence.

ONE HUNDRED & TWENTY-EIGHTH CASE.

Frances Wallace was feverish for two or three days, but no eruption ensued.

ONE HUNDRED & TWENTY-NINTH CASE.

Joseph Rogers on the 8th day complained of pain in the axilla, and was affected with head-ach for two or three days; but he had no eruption.

ONE HUNDRED & THIRTIETH CASE.

Thomas Thoroughgood made the same complaints as Rogers. He had 33 pustules.

ONE HUNDRED & THIRTY-FIRST CASE.

Ann Thoroughgood was indisposed for six or seven days, but she had only ten pustules.

The preceding twelve patients have had variolous matter inserted in their arms without effect.

The following persons were inoculated with the matter taken from the pustules of Martha Streeton, viz.

Sufan Reeve, eighteen months old; Ann Reeve, five weeks old; Sufan Richardson, thirteen years old; and Mary Adams, six months old.

132d and 133d CASES.

Sufan Reeve and Ann Reeve were very little disordered by the inoculation; the former, however, had 20, and the latter 12 pustules.

ONE HUNDRED & THIRTY-FOURTH CASE.

Sufan Richardson continued indisposed from the 10th till the 14th day, but she had only 12 pustules.

ONE

ONE HUNDRED & THIRTY-FIFTH CASE.

Mary Adams had about 200 pustules; but the eruptive symptoms were not severe. The tumour in this case spread, and formed an irregular margin, which was studded with confluent pustules.

March 7th.—The disease was transferred from the pustules upon Sarah Dixon, to the following children, viz.

Caroline Harriskind, four years old; Wm. Harriskind, two years old; Daniel Harding, fourteen weeks old; Elizabeth Harding, three years old; James Waters, twelve years old; and Joseph Harding, seventeen years old.

136th and 137th CASES.

Caroline and Wm. Harriskind were feverish for two or three days. The former had 100, and the latter had 12 pustules.

138th and 139th CASES.

Daniel and Elizabeth Harding were but very slightly indisposed from the inoculation. Daniel had 15 very small pustules; Elizabeth had only two.

ONE HUNDRED & FORTIETH CASE.

James Waters complained of head-ach, pains of his limbs, and fore throat, from the 8th till the 14th day. The tumour at the inoculated part was never much elevated above the skin, and had an angulated border. He had 120 pustules.

ONE HUNDRED & FORTY-FIRST CASE.

Joseph Harding was very slightly disordered, and had no pustules.

March 8th.—William Shipton, four years old; George Staits, two years old; Elizabeth Youngman, three months old; Mary Dudley,

two

two years old; William Cade, ten months old; and William Piper, four months old, were inoculated with the matter of Cow-pox, taken from the arm of Esther Phipps.

142d,—143d,—144th,—and 145th CASES.

William Shipton, Elizabeth Youngman, William Cade, and William Piper, had no pustules; and none of them appeared to be disordered from the inoculation, except Piper, who was a little feverish on the 8th day. An efflorescence took place around the tumour in all of them.

ONE HUNDRED & FORTY-SIXTH CASE.

George Staits was indisposed for two days, and had 3 or 4 small pustular eruptions.

ONE HUNDRED & FORTY-SEVENTH CASE.

Mary Dudley was a little feverish on the 9th day, when a rash appeared which receded
the

the following day, and about 50 small pustules were discovered; these, however, disappeared in the course of 24 hours.

March 11th.—Hannah Timms, nineteen years old; Susan Timms, seventeen years old; Jane Franklin, twelve years old; and Henry Lee, fifteen years old, were inoculated with the matter of Cow-pox, taken from the arm of Mary Webb.

ONE HUNDRED & FORTY-EIGHTH CASE.

Hannah Timms was affected with febrile symptoms from the 8th till the 16th day, and had 165 pustules, all of which suppurated.

ONE HUNDRED & FORTY-NINTH CASE.

Susan Timms was ill from the 9th till the 14th day. She had no eruption.

Jane

ONE HUNDRED & FIFTIETH CASE.

Jane Franklin was very little indisposed from the inoculation, and had no eruption.

ONE HUNDRED & FIFTY-FIRST CASE.

Henry Lee complained for two or three days, and had only one pustule.

March 13th.—The following persons were inoculated with the matter of Cow-pox, taken from the arm of Sarah Hat, viz.

Ann Spooner, twenty-one years old; Matthew Wall, fourteen years old; John Wall, ten years old; William Ockendon, twelve years old; Joseph Ockendon, ten years old; William Jennings, seven years old; George Jennings, six years old; John Pluckrose, seven years old; Charlotte Webb, fourteen weeks old; Charles Dibden, three months old; Elizabeth Eaton, two years old;

Charlotte

Charlotte Eaton, ten months old ; and Joseph Pigg, eleven years old.

ONE HUNDRED & FIFTY-SECOND CASE.

Ann Spooner was indisposed for three or four days, and had 150 pustules.

ONE HUNDRED & FIFTY-THIRD CASE.

Matthew Wall was a little indisposed for three days. He had 10 pustules.

ONE HUNDRED & FIFTY-FOURTH CASE.

John Wall made no complaint, and had no eruption.

ONE HUNDRED & FIFTY-FIFTH CASE.

William Ockendon was indisposed from the 8th till the 10th day. He had only one pustule.

ONE HUNDRED & FIFTY-SIXTH CASE.

Joseph Ockendon was ill for three days.
He had no eruption.

ONE HUNDRED & FIFTY-SEVENTH CASE.

William Jennings complained of head-ach
two days. He had only one pustule.

ONE HUNDRED & FIFTY-EIGHTH CASE.

George Jennings was disordered in the same
manner as his brother William, but he had no
eruption.

ONE HUNDRED & FIFTY-NINTH CASE.

John Pluckrose made no complaint, and had
no eruption.

160th and 161st CASES.

Charlotte Webb and Charles Dibden.—The
former was not perceptibly disordered by the
inoculation, and had no pustules. The latter
was a little feverish on the ninth day, and
vomited.

vomited. He had three pustules at the inoculated part only.

162d and 163d CASES.

Elizabeth Eaton and Charles Eaton were both slightly indisposed on the 11th and 12th day; and each had about twenty pustules.

ONE HUNDRED & SIXTY-FOURTH CASE.

Joseph Pigg complained of a pain in the axilla, and of a slight head-ach for four days. He had fourteen pustules only.

March 13th.—The following were inoculated with the matter of Cow-pox, taken from the arm of Samuel Lampart, viz.

Mary Ockendon, sixteen years old; Sarah Ockendon, seven years old; Sarah Stacey, twelve years old; Ann Stacey, seven years old; Mary Fuller, eleven years old; Isabella Barrett, eleven years old; Mary Perry, three
years

years old; Sufan Vinicum, five months old; Elizabeth Renfden, eighteen months old; Mary Ward, ten months old; Wm. Terrey, two months old; Caroline Poorey, three years old; Ann Poorey, eleven months old; John Langstaff, four years and an half old; Emma Lightfoot, thirteen months old; Daniel Sinclair, seven months old; M. H. Hills, eighteen weeks old; and Catharine Donaldson, nineteen months old.

ONE HUNDRED & SIXTY-FIFTH CASE.

Mary Ockendon was indisposed from the 9th till the 14th day. She had only six pustules.

ONE HUNDRED & SIXTY-SIXTH CASE.

Sarah Ockendon complained of head-ach, pain of her limbs, &c. from the 10th till the 14th day, but only four pustules appeared.

ONE HUNDRED & SIXTY-SEVENTH CASE.

Sarah Stacey was indisposed from the 10th till the 15th day. No pustules appeared.

ONE HUNDRED & SIXTY-EIGHTH CASE.

Ann Stacey's case was similar to that of her sister Sarah.

169th and 170th CASES.

Mary Fuller and Ifabella Barrett, both complained of the febrile symptoms from the 9th till the 14th day. The former had six, and the latter twenty pustules.

171st,—172d,—and 173d CASES.

Mary Perry, Susan Vinicum, and Elizabeth Brenfden, did not appear to be indisposed from the inoculation, and had no eruption: but the tumours in all were considerable, and surrounded by an efflorescence.

ONE HUNDRED & SEVENTY-FOURTH CASE.

Mary Ward was a little feverish for two days, and a few small pustules appeared for one day only.

175th,

175th,—176th,—177th, and 178th CASES.

Wm. Terry, Ann Poorey, Caroline Poorey, and John Langstaff, had no pustules, neither did any of them appear to be indisposed, except Ann Poorey, who was feverish for two days.

179th and 180th CASES.

Emma Lightfoot and Daniel Sinclair were both a little disordered for two or three days, and the former had four or five small pustules, but the latter had no eruption.

181st and 182d CASES.

Ann Hills and Catharine Donaldson had neither fever nor eruption.

ONE HUNDRED & EIGHTY-THIRD CASE.

Ann Clarke was inoculated with the matter of Cow-pox, taken from the arm of Peter Peters, which produced two or three small evanescent pustules; but no fever took place.

March

March 15th.—John Buckthorpe, twenty-two years old; John Cater, fourteen years of age; Susan Tomlins, nineteen years old; Maria Burgefs, four years old; and Sophia Burgefs, three years old, were inoculated for the Cow-pox, with matter taken from the arm of Joseph Wrench.

ONE HUNDRED & EIGHTY-FOURTH CASE.

John Buckthorpe was indisposed from the 9th till the 14th day. He had nearly 100 pustules.

ONE HUNDRED & EIGHTY-FIFTH CASE.

John Cater complained of head-ach, &c. from the 8th till the 11th day. He had forty pustules.

ONE HUNDRED & EIGHTY-SIXTH CASE.

Susan Tomlins continued ill for three days. She had 24 pustules.

187th and 188th CASES.

Maria and Sophia Burgefs were neither indisposed from the inoculation. Sophia had no pustules, and Maria only three.

March 18.—The following persons were inoculated with the matter of Cow-pox, taken from the arm of Elizabeth Platford.

John Williams, seven months old; James Runtfman, three months old; Robert Lear, seventeen months old; John Selby, five months old; Samuel Ariell, two years old; James Ariell, five years old; Henry Servy, two years and a half old; Sarah Lovell, four years old; Henry Lovell, two years old; Rebecca Salmon, nine months old; John Corwell, eight months old; and Francis Cundell, six months old.

ONE HUNDRED & EIGHTY-NINTH CASE.

John Williams had no indisposition, nor no pustules. The tumour was surrounded with an efflorescence on the 11th day.

ONE HUNDRED & NINETIETH CASE.

James Runtzman was a little feverish on the evening of the 10th. He had no eruption.

ONE HUNDRED & NINETY-FIRST CASE.

Robert Lear's case was similar to that of Runtzman.

ONE HUNDRED & NINETY-SECOND CASE.

John Selby was feverish two days, and had forty pustules.

193d and 194th CASES.

Samuel Ariell and James Ariell were both feverish on the 10th and 11th day, but neither had any eruption.

195th and 196th CASES.

Henry Servy and Sarah Lovell were disordered two days. The former had no pustules, the latter 40.

ONE HUNDRED & NINETY-SEVENTH CASE.

Henry Lovell was ill three days, and had 170 pustules.

ONE HUNDRED & NINETY-EIGHTH CASE.

Rebecca Salmon was very slightly indisposed, but had about 200 pustules, which were very small.

199th and 200th CASES.

John Corwell and Francis Cundell were both feverish for two or three days: the former had 36, and the latter 12 pustules.

All the above patients, inoculated since the 6th of March, have subsequently had variolous matter inserted in their arms, except the two Ariells, but it produced no disorder.

In order that the progressive descent of the Cow-pox infection from patient to patient, as well as the magnitude of the disease which was excited by the inoculation, may be comprehended at one view, I have subjoined the following tabular statement.

It may be observed, that the matter used for the preceding inoculations, was not only derived immediately from the pustular eruptions upon the teats of the cow, but also from Sarah Rice, who contracted the disease by milking the infected cows. I begin with the former. In the first and second divisions opposite to the names, the age in years or months is recorded; in the third, the number of days during which the febrile symptoms continued; and in the last, the number of pustules produced.

TABLE.

T A B L E.

	Years of Age.	Months	Days of Illness.	No. of puffules
From the Cow to				
M. Payne	2	6	3	0
E. Payne	—	4	5	0
Buckland	—	4	4	24
R. Payne	10	—	0	5
Redding	16	—	1	4
Collingridge	17	—	4	170
Pink	15	—	0	0
From M. and E. PAYNE to				
Talley	14	—	—	—
Brown	15	—	—	—
From COLLINGRIDGE to				
Mundy	25	—	2	15
George	25	—	6	530
Butcher	13	—	2	0
Dorset	19	—	1	0
From BUCKLAND's puffules to				
S. Price	13	—	2	6
From REDDING to				
Wife	14	—	0	4
From MUNDY to				
Slade	21	—	5	4
From GEORGE to				
Tarrent	19	—	1	0

	Age Years.	Months	Days of Illness.	No. of Puffules.
From BUTCHER to				
Jewel	20	—	2	0
Bumpus	20	—	6	310
West	21	—	5	20
W. Hull	11	—	4	200
H. Hull	13	—	1	8
S. Hull	8	—	2	120
From JEWEL to				
Fisk	—	4	4	40
Reed	15	—	5	70
From S. PRICE to				
Pedder	—	11	5	40
Hoole	—	5	5	102
Hickland	—	6	3	300
Morton	—	9	7	200
From FISK to				
Davy	—	3	1	3
Murrell	—	7	4	20
From BUMPUS to				
Dixon	19	—	4	174
W. Walker	—	11	0	0
Cummins	—	3	0	0
Ellistone	—	3	2	0
Dunn	—	8	3	0
From WEST to				
So. Dobinson	5	—	0	0
Sarah Dobinson	3	—	0	0
H. Dobinson	1	—	1	0
Giles	20	—	3	30

	Age, Years.	Months.	Days of Illness.	No. of Pustules.
From WEST to				
Bigg	18	—	5	12
Briaris	16	—	4	2
From REED to				
Cowling	23	—	4	50
Webb	12	—	0	12
Mafon	2	6	0	4
Goodluck	—	3	2	0
From MURRELL to				
Hatt	20	—	4	40
Platford	17	—	8	1000
From H. DOBINSON to				
Gunter	1	—	2	3
Scars	—	9	5	200
E. Giles	—	9	3	90
From DIXON's Pustules to				
C. Harriskind	4	—	4	100
W. Harriskind	2	—	3	12
D. Harding	—	3	1	15
E. Harding	3	—	1	2
Waters	12	—	6	120
J. Harding	17	—	1	0
From WEBB to				
H. Timms	19	—	7	165
S. Timms	17	—	5	0
Franklin	12	—	1	0
Lee	15	—	2	3
From HAR to				
Spooner	21	—	4	150

	Age, Years.	Months.	Days of Illness.	No. of Pustules.
From HAT to				
M. Wall	14	—	3	10
J. Wall	10	—	0	0
J. Ockendon	10	—	3	0
W. Ockendon	12	—	3	1
W. Jennings	7	—	2	1
G. Jennings	6	—	2	0
Pluckrofe	7	—	0	0
C. Webb	—	3	0	0
Dibden	—	3	1	0
E. Eaton	2	—	2	2
C. Eaton	—	10	2	2
Pigg	11	—	4	14
From PLATFORD to				
Williams	—	7	0	0
Runtfman	—	3	1	0
Lear	1	5	1	0
Selby	—	5	2	40
S. Ariell	2	—	2	0
J. Ariell	5	—	2	0
Servy	2	6	2	0
S. Lovell	4	—	2	40
H. Lovell	2	—	3	170
Salmon	—	9	1	200
Corwell	—	8	3	36
Cundell	—	6	2	12
From S. RICE to				
Harris	21	—	0	300
Bunker	15	—	3	3

	Age, Years.	Months.	Days of Illness.	No. of Puffules.
From S. RICE to				
Crouch	7	—	0	0
Fox	25	—	—	—
Dennis	23	—	—	—
From CROUCH to				
Keys	25	—	1	0
Turner	24	—	6	220
Morgan	1	—	5	0
Mr. Coleman's Cow.				
From the Cow to				
Streeton	22	—	6	300
Smith	16	—	4	105
Meacock	30	—	5	350
From TURNER to				
Fairbrother	15	—	4	4
Calloway	19	—	3	20
Camplin	17	—	4	30
J. Turner	—	8	2	1000
Buckley	—	5	1	0
Welch	—	3	1	0
From STREETON to				
Grenvill	20	—	3	35
Honeywood	2	—	0	0
Rood	1	6	2	0
Mile	1	3	0	0
Jenkins	1	—	3	300
Barber	—	11	2	1
Dix	—	11	0	6
A. Walker	—	10	2	0

	Age, Years.	Months.	Days of Illness.	No. of Pustules.
From STREETON to				
Brough	—	10	3	20
Towfer	—	8	2	10
Knighton	—	8	2	0
Price	—	8	1	0
Spillsbury	—	4	2	0
May	—	4	4	5
Sully	—	3	1	0
Terry	—	2	1	1
Scott	—	2	1	0
Johnston	—	2	0	0
Stewart	—	2	0	0
From SMITH to				
Wrench	24	—	3	30
S. Peters	19	—	4	1
P. Peters	18	—	4	24
Brown	5	—	0	0
Shiple	3	—	0	1
Crosby	—	10	0	0
Evans	—	7	2	0
From MEACOCK to				
C. Cooke	4	—	0	0
A. Cooke	2	—	0	0
From BROWN to				
R. Scott	2	6	1	14
Bennett	1	—	0	0
Black	1	—	3	7
M. Jenkins	—	9	1	0
Lawyer	—	8	0	0

	Age, Years.	Months.	Days of Illness.	No. of Pustules.
From BROWN to				
King	1	6	0	0
Jones	1	6	0	0
Phipps	1	6	3	0
Newman	1	6	4	0
Harper	1	5	2	0
From MAY to				
G. Paul	3	—	0	2
A. Paul	1	—	3	40
Chandler	—	5	0	0
M. Hatt	1	—	1	5
Boardore	—	7	0	0
Lampart	2	—	2	3
Page	1	6	0	0
Carter	—	1	2	3
Sermon	—	6	3	5
A. Marshall	2	—	0	0
H. Marshall	—	4	0	0
Henley	5	—	0	0
New	1	6	4	100
From TURNER'S Pustules to				
M. Crouch	3	—	0	0
From STEWART to				
Wood	3	—	1	0
Clifford	2	6	1	0
From A. WALKER to				
Restieux	1	4	0	0
Bates	1	1½	0	0
Thompson	2	—	2	1

	Age, Years.	Months.	Days of Illness.	No. of Pustules.
From A. WALKER to				
W. London	3	—	1	0
J. London	—	6	0	0
Wallace	3	—	2	0
Rogers	42	—	3	0
T. Thoroughgood	14	—	3	33
A. Thoroughgood	17	—	6	10
From STREETON's pustules to				
S. Reeve	1	6	1	20
A. Reeve	—	1	1	12
Richardson	13	—	3	12
Adams	—	6	3	200
From PHIPPS to				
Shipton	4	—	0	0
Staits	2	—	2	3
Youngman	—	3	0	0
Dudley	2	—	1	50
Cade	—	10	0	0
Piper	—	4	1	0
From LAMPART to				
M. Ockendon	16	—	4	6
S. Ockendon	17	—	3	4
S. Stacey	12	—	4	0
A. Stacey	7	—	4	0
Fuller	11	—	4	6
Barrett	11	—	4	20
Perry	3	—	0	0
Vinicum	—	5	0	0
Bensden	1	6	0	0

	Age, Years.	Months.	Days of Illness.	No. of Pustules.
From LAMPART to				
Ward	1	10	2	7
Terry	1	2	0	0
C. Poorey	3	—	0	0
A. Poorey	—	11	2	0
Langstaff	4	6	0	0
Lightfoot	1	1	2	5
Sinclair	—	7	2	0
Hills	—	4	0	0
Donaldson	1	7	0	0
From WRENCH to				
Buckthorpe	22	—	4	100
Cater	14	—	3	40
Tomlin	19	—	3	24
M. Burgefs	4	—	0	3
S. Burgefs	3	—	0	0
From P. PETERS to				
Clarke	5	—	0	3

The preceding Table comprehends all the Cases originally intended to have been given in this work, the publication of which from a concurrence of circumstances, has been delayed much longer than the Author expected, and has thereby afforded him an opportunity of making the following additions.

	Age, Years.	Months.	Days of Illness.	No. of Pustules.
From PLATFORD's pustules to				
Prince	1	—	0	30
Chandler	1	9	0	40
Jervoise	—	6	1	0
Palmer	—	3	3	100
Henderfon	—	10	4	300
Crawford	1	10	3	250
From DUDLEY to				
A. Vallentine	3	—	2	0
J. Vallentine	2	—	3	0
From S. TIMMS to				
S. Harris	21	—	7	6
S. Clarke	—	9	2	0
M. Harris	23	—	6	60
Ludgrove	—	11	2	0
Stringer	20	—	4	2
From GRENVILLE to				
B. Crane	2	—	3	200
T. Crane	4	—	2	12
Garrett	14	—	4	62
M. Crane	8	—	4	30
From A. STACEY to				
M. Stacey	38	—	3	5
R. Stacey	—	7	0	12
J. Stacey	3	6	0	5
Harriott	—	8	1	6
M. Waite	—	10	2	50
J. Waite	3	—	2	20

	Age, Years.	Months.	Days of Illness.	No. of Puffules.
From M. OCKENDON to				
H. Pigley	22	—	4	100
Dach	—	4 $\frac{1}{2}$	2	0
G. Pigley	—	5	0	0
Morgan	—	2 $\frac{1}{2}$	0	0
Bradley	19	—	6	156
Harrifon	—	2	1	0
Morton	—	5	0	0
Cooper	4	11	0	0
E. Cooper	—	4	1	0
Ellikins	3	3	0	0
M. Hide	4	11	0	0
D. Hide	1	5	0	0
Phillips	—	8	0	0
From TOMLIN to				
C. Hopes	3	—	1	0
S. Hopes	1	—	0	0
Oliphant	3	—	1	0
Castin	—	6	3	0
Hamm	2	—	0	0
A. Smith	4	—	0	0
Reynolds	—	4	0	0
From J. WALL to				
Gallway	—	3	1	0
Barneby	1	6	0	0
Dick	2	8	0	3
Dalkins	—	5 $\frac{1}{2}$	1	0
Bromley	1	2	2	3
Ford	—	6	2	0

	Age, Years.	Months.	Days of Illness.	No. of Pustules.
From J. VALLENTINE to				
Merrin	—	3	0	0
Loathis	4	—	3	5
Gedge	—	4½	0	0
Beasley	—	3	0	4
Goodman	1	10	2	40
From SPOONER to				
Stainer	16	—	3	34
M. Pepler	4	—	0	0
Swannell	10	—	3	6
F. Pepler	2	—	0	0
Brown	19	—	4	35
P. Roberts	6	—	4	12
M. Roberts	4	—	0	6
C. Roberts	1	8	3	6
Freeman	11	—	4	40
A. Palmer	—	9	2	40
Wade	16	—	4	3
From COOPER to				
Munden	—	7	1	50
From H. TIMMS's pustules to				
Stiles	—	6	3	500
Burrows	—	5	1	12
From M. BARTLETT to				
J. Mundy	—	6	3	100
From COWLEY to				
Nash	15	—	1	0
From SPOONER's pustules to				
Serjeant	16	—	4	35

	Age, Years.	Months	Days of Illness.	No. of Pustules.
From SPOONER'S Pustules to				
Cook	15	—	2	11
From STRINGER'S pustules to				
Argant	17	—	7	19
From H. TIMMS'S Pustules to				
E. Gilbert	17	—	3	4
Brewster	11	—	4	6
Truluck	—	6	2	250
Wiggins	—	5	0	7
Th. Turner	—	6	0	50
Gilbert	—	6	3	500
Downes	—	4	2	30
King	—	2	2	4
Talbot	—	4	3	500
From CORWELL TO				
Graham	—	4	0	0
Sellers	15	—	0	0
From BARRETT TO				
T. Barrett	32	—	3	200
M. Barrett	5	—	0	0
J. Barrett	2	3	1	0
H. Barrett	—	7	2	30
E. Wybrow	5	—	3	200
T. Wybrow	9	—	3	150
J. Wybrow	1	—	1	6
Harwood	2	3	1	6
M. Harwood	4	—	0	12
J. Harwood	5	—	2	6
P. Harwood	—	5	4	200

	Age, Years.	Months	Days of Illness.	No. of Pustules.
From BARRETT to				
Higgins	—	3	0	0
M. Higgins	2	6	0	5
From HENDERSON to				
Upstone	19	—	5	12
I. Bumpus	16	—	5	20
From S. HARRIS to				
Tyler	13	—	0	0
W. Meacock	18	—	5	400
M. Meacock	29	—	5	20
R. Meacock	1	—	3	6
Porch	3	6	0	2
E. Porch	2	—	0	0
J. Porch	—	4	3	350
Fermoy	—	11	0	60
Gurney	—	11	0	0
Downs	1	6	3	200
From WADE to				
Mays	1	1	2	500
From J. MUNDY to				
Matthews	—	4	2	0
From BREWSTER to				
M. Brewster	—	11	0	0
From LEE's Pustules to				
Baker	29	—	3	140
Caterer	15	—	5	8
R. Featherstone	12	—	3	40
C. Featherstone	9	—	3	120
Porter	5	—	0	9

	Age, Years.	Months	Days of Illness.	No. of Pustules.
From LEE'S Pustules to				
J. Porter	1	6	1	12
J. Jennings	5	—	1	30
C. Jennings	3	—	1	30
W. Jennings	1	1	0	9
Mansfield	1	6	2	12
S. Wybrow	6	—	2	300
S. Baker	1	1	3	25
J. Gofs	2	8	1	0
W. Gofs	—	8	2	30
Odell	—	9	3	90
Murphield	—	6	2	0
From DALKINS to				
Sharp	—	4	2	0
From WAITE to				
T. Jennings	1	6	0	0
Kitchen	5	—	1	0
S. Pluckrose	4	—	2	0
T. Pluckrose	—	10	2	0
Rout	—	6	1	20
W. Houghton	2	6	1	0
From SWANNELL to				
Mickland	—	2	0	3
Ferguson	—	7	1	7
Goddard	1	—	2	0
Roberts	—	9	1	0
Gran	—	6	1	0
Benson	—	8	2	0
Floaks	—	2	1	2

	Age, Years.	Months	Days of Illness.	No. of Puffules.
From M. GILBERT to				
Welch	15	—	3	100
Rowley	—	3	2	25
A. Waite	17	—	4	10
Tarbotts	1	1	2	600
S. Tarbotts	3	3	4	300
Bell	—	3	3	250
From S. HOPES to				
Snell	17	—	2	200
I. Houghton	32	—	3	200
Stedman	—	5	3	60
M. Broadwood	—	6	2	150
W. Broadwood	—	6	2	200
Sorrell	4	11	4	500
S. Sorrell	6	—	1	1
Underwood	—	9	2	105
From ELLIKIN to				
G. Cooke	2	2	3	20
Coffin	—	5	2	0
From REYNOLDS to				
Walford	—	6	2	600
From WADE to				
Wentworth	1	8	3	500
Gibson	—	8	0	0
Lifter	—	5	0	0
Wooden	1	4	4	0
Smart	6	—	2	0
Taylor	1	—	1	200

	Age, Years.	Months	Days of Illness.	No. of Puffules.
From WADE to				
Arnold	—	5	3	0
Turvey	—	3	2	12
Guilder	2	3	2	0
Gallop	—	2	2	0
Stanny	2	2	4	2
Moore	—	4	0	0
M. Moore	2	6	1	0
From OLIPHANT to				
Abfalom	—	7	1	0
From M. FORD to				
Clark	2	4	3	0
Cox	1	7	2	0
Sandaw	—	2	0	0
From J. ROBERTS to				
T. Roberts	3	—	3	0
From KITCHEN to				
T. Foster	5	—	2	5
J. Foster	1		1	2
M. Foster	1		1	24
S. Gobby	27	—	2	20
W. Gobby	5	—	0	2
J. Gobby	—	6	3	0
Putney	—	7	2	0
Bush	1	7	1	0
E. Franklin	3		2	0
S. Franklin	—	8	0	0
Neat	2		2	9
Hicks	3		2	0

	Age, Years.	Months	Days of Illness.	No. of Puffules.
From KITCHEN to				
More	—	5	0	0
Barker	6	—	2	6
North	2	—	3	0
Cowland	1	3	3	12
Harrifon	—	8	1	5
R. Lawyer	36	—	1	1
E. Lawyer	3	6	1	7
F. Lawyer	4	6	0	0
M. Lawyer	1	—	0	0
E. Dunn	5		0	0
F. Dunn	2	6	0	0
T. Dunn	—	3	2	6
N. Collop	9	—	1	0
J. Collop	7	—	1	0
A. Collop	3	—	1	0
E. Collop	—	5	0	0
T. Wiggins	7		0	0
W. Wiggins	4		0	0
P. Wiggins	1	6	0	0
Ruffles	19	—	2	6
Bridges	—	1	0	0
From I. BARRETT to				
I. Mitchell	6	—	2	100
P. Mitchell	4	—	2	50
T. Mitchell	2	—	2	26
From COOK to				
E. Chapman	12	—	2	27
M. Chapman	9	—	3	67

	Age, Years.	Months	Days of Illness.	No. of Puffules.
From COOK to				
Good	13	—	4	400
From STYLES to				
Edwards	18	—	3	0
From TALBOT to				
Brandrom	12	—	0	0
From CATERER to				
Stapler	22	—	4	300
Marsham	17	—	4	43
Waller	18	—	3	15
Wall	8	—	3	200
R. Johnston	—	3	2	0
Fletcher	—	6	3	500
From BRADLEY'S Puffules to				
Vaughan	—	5	2	12
Vethall	—	4	3	200
Hope	—	6	4	100
Masterfon	—	5	2	20
Green	2	4	3	30
Lutman	1	—	2	20
Roberts	—	4	3	450
Starbuck	—	5	2	20
M. Phillips	2	2	3	500
S. Phillips	3	11	3	5
Wicks	—	4	2	36
Terry	—	3	2	8
Sheriff	7	—	3	34
Steers	13	—	3	40

	Age, Years.	Months	Days of Illness.	No. of Pustules.
From I. HOUGHTON to				
S. Houghton	19	—	0	0
W. Houghton	58	—	0	0
Jolly	1	8	0	0
From T. PLUCKROSE to				
Lineau	12	—	3	3
Woolard	2		0	0
From KITCHEN to				
Kettridge	16	—	1	3
Raymond	1	—	1	3
From I. HARWOOD to				
A. Harris	26	—	4	100
M. Harris	—	1	4	500
S. Harris	4	6	5	50
W. Harris	5	6	2	25
G. Harris	2	6	1	5
S. Boyton	8		4	700
E. Boyton	6		3	600
J. Boyton	3		3	350
From TALBOT to				
Lemare	—	6	3	60
Williams	—	9	4	650
English	1	3	2	100
Churchman	—	3	4	30
Hunt	1	2	4	700
Whitburn		9	4	430
Chartau		10	4	17
Callen		8	3	75
Ruffel	—	5	4	15

	Age, Years.	Months	Days of Illness.	No. of Pustules.
From TALBOT to				
E. Ruffel	3	6	3	12
Knight	—	8	3	500
Richardson	—	6	2	200
Johnston	1	7	3	150
From J. Goss to				
Blinkinhorn	—	2	0	0
Millward	—	7	0	5
Haywood	1	8	4	46
A. Godden	1	—	2	300
W. Godden	3	—	3	650
Jones	—	6	0	0
Paradise	3	—	3	50
Kelly	2	—	0	100
Hales	—	6	4	500
I. Mountain	4	6	2	300
M. Mountain	2	—	2	150
A. Mountain	1	—	1	75
From BREWSTER to				
Barnett	1	1		
Balling	—	9	2	6
Upton	1	9	3	0
Fenn	1	1	2	0
Hilliard	—	6	0	0
White	1	4	1	0
From W. MEACOCK to				
Westbrook	—	3	0	0
From E. CHAPMAN to				
Hider	—	2	1	0

	Age, Years.	Months	Days of Illness.	No. of Puffules.
From E. CHAPMAN to				
Hughes	1	8	3	12
C. Hughes	—	5	2	4
From M. CHAPMAN to				
Sharp	18	0	3	30
Calburn	16	—	3	12
Ledger	—	4	2	50
Vautin	1	—	1	2
M ^c Kennish	4	3	2	150
Wright	—	7	3	10
Rance	—	2	0	0
From RUFFLES to				
Thornton	17	—	1	0
Boreham	16	—	2	3
Hill	—	5	1	0
Towler	1	3	1	0
French	—	11	0	0
Breffley	—	8	0	0
Thomas	—	4	1	0
Richardson	—	9	0	0
Morgan	—	5	0	0
From A. WAITE to				
Wood	22	—	4	6
Young	16	—	2	0
Norman	12	—	2	0
M. Bartlett	—	11	1	20
Askew	—	3	0	15
Clark	—	9	0	0

Those who are acquainted with the history of the Cow-pox, will no doubt be surpris'd to find from the preceding cases, that pustules have frequently been the consequence of the inoculation of this disease. Indeed, when I first observed a pustular eruption upon Buckland; (Case 3d) the occurrence being wholly unexpected, I was not without apprehension that the lancet which was employed in his inoculation might have had some particles of variolous matter adhering to it. But this suspicion was soon removed; for, upon enquiry, I found that all the lancets which I had used on the 21st of January, were then made use of for the first time since they had been ground by the cutler.

Among the patients inoculated for the Cow-pox during the first week in which I obtained the matter of this disease, several were so circumstanced as to be afterwards

constantly exposed to the infection of the Small-pox. Having then had no proof that the progress of the infection of the former would supersede that of the latter, I used the precaution to inoculate the patients with variolous matter on the fifth day after that taken from the cow had been inserted. This led some medical gentlemen to suppose that the matter locally formed in the arm from the first inoculation, might be variolated by the progress of the second inoculation in the other arm, and that consequently the matter generated in the Cow-pox tumour with which others were inoculated, would produce a hybrid disease, and not the genuine Cow-pox. But as the matter employed in the Cow-pox inoculations was always taken before the constitution could be affected by the variolous matter, and during the time that both inoculations were merely local diseases, I apprehend

hend its effects would be the same as if the variolous inoculation had not taken place. Nay, had this not been the case, but had several patients been inoculated with matter taken from the Cow-pox tumour on the arm of Jane Collingridge, after both the inoculations were supposed to have affected the constitution for several days, neither facts nor analogy lead us to believe that the matter thus obtained would produce any other disease than that of its own species, or that its specific morbid quality would be changed by entering into combination with the virus of the Small-pox. The general character of the tumour formed by the inoculation of the Small-pox, is very different from that of the Cow-pox; and though on the same day a person be inoculated in one arm with the matter of the Cow-pox, and in the other with that of the Small-pox, yet both tumours preserve their

respective characteristic appearances throughout the whole course of the disease. This is certainly a strong proof that the two diseases, in respect to their local action, continue separate and distinct.

Twenty-eight patients were on the same day inoculated with the matter of Cow-pox, and that of the Small-pox, mixed together in equal quantities, in order to try which would prevail, or if it were probable to produce a hybrid disease by a union of both. The result was, that in more than one half of the patients thus inoculated, the local affection distinctly assumed the characters of the Cow-pox; in the others it more resembled the Small-pox, but in none of them was there much indisposition, or many pustules.

At the request of Dr. Jenner, I transmitted to him, in Gloucestershire, some of the Cow-pox matter, from the patients then under

my

my care, which he used for the purpose of inoculation: after a trial of it, he informed me, that “the rise, progress, and termination of the pustule, created by this virus on the arm, was exactly that of the true uncontaminated Cow-pox.” The matter sent was taken from the arm of Ann Bumpus, who had 310 pustules, all of which suppurated; yet with the matter of this stock, Dr. Jenner inoculated twenty, and another gentleman, in the same county, 140 persons, without producing any pustules which matured.

This fact would appear to confirm an opinion entertained by Dr. Jenner. In his second publication on the *variola vaccinae* he seems disposed to attribute the pustules which so often attended this disease in London and its vicinity, to some peculiar influence of the town air. But of the cases which I have stated, several were those of patients who were
 inoculated

inoculated eight miles distance from London: yet these patients, in the proportion of about one in five, had an eruption. And at a small village, still farther from London, eighteen persons were inoculated with similar matter, in all of whom it produced pustules.

The 27th Case also affords decisive evidence, that the matter employed in it was that of the Cow-pox, for Jewel had undergone the Small-pox when a child; yet the inoculation excited febrile symptoms of two or three days duration, and the tumour which was produced upon her arm, did not begin to scab till the 13th day.

Having now, I presume, given sufficient reasons for establishing the point for which they have been adduced, I shall proceed to enquire how far the effects of the Cow-pox, upon the human subject, seem to differ from or correspond with, those of the Small-pox, when communicated by inoculation.

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The vaccine disease, as it has lately been called, affords a striking example, and perhaps the only one yet discovered, of a disorder which can be transferred from brute animals to man, and carried back again from him to the brute. A remarkable instance of this is related at page 62, which shows, that the matter of the Cow-pox, as reproduced by inoculation in the human animal, and inserted into the teat of a Cow, produced the disease. Similar attempts were also made with variolous matter, which had no effect; hence in this respect these two morbid poisons appear to differ. The Cow-pox also differs from the Small-pox in acting upon the constitutions of those who have undergone the latter disease, as was fully exemplified in the case of Frances Jewel. However, I am disposed to think, that the matter of the Cow-pox is not so capable of affecting persons, who have had the Small-

pox, as has been represented. I made several trials to inoculate this disease in patients at the Hospital, who were recovering from a full eruption of the natural Small-pox, but in no instance did any tumour appear on the arm; neither does the insertion of the variolous matter, in such cases, excite the least inflammation in the skin. It is probable, therefore, that the matter of the Cow-pox, like that of the Small-pox, does not manifest any local action upon persons who have lately undergone the variolous disease. If a person has casually received the infection of the Small-pox, and be inoculated with variolous matter three or four days before the eruptive symptoms supervene, the inoculated part does not tumify, as in other cases, but becomes a simple pustule: on the contrary, if a person has been inoculated, and the progress of the inoculation be so far advanced that the patient is

within one day of the approach of the eruptive fever, and be then inoculated a second time, the tumour produced, from the second inoculation, will become nearly as extensive as the first, and be in a state of suppuration a few hours after the fever commences. Hence it appears, that the process of variolation in the natural and in the inoculated Small-pox, is different. The Cow-pox, in every case with which we are acquainted, has been introduced into the human constitution through the medium of external local inflammation, and is therefore to be considered as an inoculated disease: the virus of it seems also to affect a similar mode of action, and to be governed by the same laws as that of the Small-pox. Thus if a person be alternately inoculated with variolous matter, and with that of the Cow-pox every day till fever is excited, all the inoculations make a progress;

and as soon as the whole system becomes disordered, they appear to be all equally advanced in maturation. However, the local tumour excited from the inoculation of the Cow-pox, is commonly of a different appearance from that which is the consequence of inoculation with variolous matter; for if the inoculation be performed by a simple puncture, the consequent tumour, in the proportion of three times out of four, or more, assumes a form completely circular, and it continues circumscribed, with its edges elevated, and well defined, and its surface flat throughout every stage of the disease; while that which is produced from variolous matter, either preserves a pustular form, or spreads along the skin, and becomes angulated and irregular, or disfigured by numerous vesiculæ.

Another distinction, still more general and decisive, is to be drawn from the contents of

the

the Cow-pox tumour; for the fluid it forms, unless from some accidental circumstance, very rarely becomes puriform, and the scab which succeeds is of a harder texture, exhibits a smoother surface, and differs in its colour from that which is formed by the concretion of pus. All the appearances here described, however, do not constantly attend the disease, but are sometimes so much changed, they can in no respect be distinguished from those which arise from the inoculation of the Small-pox. When the disease thus deviates from its usual appearance at the inoculated part, its effects upon the constitution, have commonly, though not always, been felt more severely than where the tumour was distinctly characterised.

As I have now pointed out the principal circumstances in which the two diseases usually differ in their local effects, I shall proceed

to examine them in a more important point of view, and to compare their general effects upon the constitution, in order, if possible, to ascertain, from the facts already adduced, whether or not the inoculation of the vaccine disease produces a milder distemper, and of less dangerous consequences to the patient, than that of the Small-pox. For if it be an established fact, as I presume it is, that those who have undergone the former disease are thereby rendered secure against the effects of the latter, it only remains to be proved, in order to make the former be generally adopted, that the disorder which attends the Cow-pox is also less severe and less fatal than the other. The number of cases of Cow-pox, inoculated under my direction, have amounted to about 600, but all these could not be included in the table, as at the time it was printed, the disease, in many patients, was not far enough advanced

advanced to give the result; and to these may be added others who did not give proper attendance, and also some whose names I am not permitted to make public.

The table, however, contains a sufficient number of cases to enable the medical reader to form a tolerably correct judgment respecting the disease; and from considering what would have probably been the effects of an equal number of cases of variolous inoculation, he may draw his own conclusions. But before this is done, I have to observe, that since the table was composed, an infant at the breast died on the eleventh day after the Cow-pox matter had been inserted in its arm. In this solitary fatal case, the local tumour was very inconsiderable, and the eruptive symptoms took place on the seventh day, when the child was attacked with fits of the spasmodic kind, which recurred at short intervals with
increased

increased violence, and carried it off at the time above mentioned, after an eruption of eighty or one hundred pustules.

It appears, therefore, that out of about 500 cases of the inoculated Cow-pox, one proved fatal, and the preceding table shows that in some others the disease, from the number of the pustules, was of formidable severity; while, on the other hand, a very large proportion of the patients were scarcely disordered from the inoculation, and had no pustules.

Were I enabled to state a number of cases of variolous inoculation, equal to those given above, and reduced to a similar tabular form, the comparative magnitude of the two diseases might be estimated with tolerable precision. It is evident, however, that the matter of the vaccine disease has generally produced much fewer pustules, and less indispo-
tion

tion than that of the Small-pox; for it appears from the preceding statement, that about two-fifths of all the persons inoculated for the *variola vaccinae*, had no pustules, and that in not more than a fourth part of them was there experienced any perceptible disorder of the constitution. But it must be acknowledged, that in several instances, the Cow-pox has proved a very severe disease. In three or four cases, out of 500, the patient has been in considerable danger, and one child, as I have already observed, actually died under the effects of the disease. Now, if it be admitted, that at an average, one of 500 will die of the inoculated Cow-pox, I confess I should not be disposed to introduce this disease into the Inoculation Hospital, because, out of the last 5000 cases of variolous inoculation, the number of deaths has not exceeded the proportion of one in 600. But I am
inclined

inclined to think, that if the matter of the Cow-pox, used for the purpose of inoculation, were only taken from those in whom the disease appeared in a very mild form, the result would be more favourable than in the statement here given. For though it has occasionally happened, that the matter taken from the arm of a patient, in whom the disorder neither produced fever nor eruption, has in others produced both; yet still it has much more commonly had the effect of exciting a milder disease than the matter of the pustules, or than that which was obtained from a patient who had the disease in a severe manner, as may be seen by an examination of the table.

Thus we find, that out of sixty-two persons, who were inoculated with the pustule matter, fifty-seven had an eruption; and those who received the disease from any of these fifty-seven patients, appear also to have had

pustules

pustules in nearly the same proportion. I may also remark, that the disease, before noticed as proving fatal to a patient, was excited from matter of this description, and taken from Talbot, (see p. 134.) Whence it appears, that the Cow-pox, from certain circumstances, is not only liable to lose the characters which distinguish it from the Small-pox, but also to continue to propagate itself under this new and casual modification. The vaccine variolæ, and the human variolæ, ought therefore to be considered as only varieties of the same disease, rather than as distinct species.

One important advantage which the Cow-pox is supposed to have over the Small-pox is that the former is not a contagious disease, and not to be propagated by the effluvia of persons infected with it. This is certainly true when the disorder is confined to the inoculated part,

but where it produces numerous pustules upon the body, the exhalation they send forth are capable of infecting others in the same manner as the Small-pox. Two instances of casual infection in this way have lately fallen under my observation; in one the disease was severe, and the eruption confluent; in the other the disease was mild, and the pustules few.

It has been asserted, that persons have had the Small-pox after having been affected with the Cow-pox; and some facts have been published with a view to show that instances of this kind have actually happened. But all these, as far as I have seen, have been very defective in not affording sufficient proof, that the affection supposed to have been the Cow-pox, was in reality that disease. On the other hand, the instances which have been brought forward to prove that those who had undergone the genuine Cow-pox resisted the infection

tion of the Small-pox, are unquestionably decisive, and sufficiently numerous to establish the fact in the most satisfactory manner. This circumstance then appears to be as much a general law of the system, as that a person having had the Small-pox is thereby rendered unsusceptible of receiving the disease a second time. For of all the patients whom I inoculated with variolous matter, after they had passed through the Cow-pox, amounting to upwards of 400, none were affected with the Small-pox; and it may be remarked, that nearly a fourth part of this number was so slightly affected with the Cow-pox, that it neither produced any perceptible indisposition, nor pustules.

We have been told, that the Cow-pox tumour has frequently produced erysipelatous inflammation, and phagedenic ulceration; but the inoculated part has not ulcerated in any

of the cases which have been under my care, nor have I observed inflammation to occasion any inconvenience, except in one instance, where it was soon subdued by the application of aqua lithargyri acetati. It should seem then, that the advantages to be derived from substituting the Cow-pox for the Small-pox, must be directly in proportion to the greater mildness of the former, than the latter disease.

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