PART II.

CRITICAL ANALYSIS.

I.

A Popular View of Vaccine Inoculation, with the practical mode of conducting it; shewing the analogy between the Small-pox and Cow-Pox, and the advantages of the latter. By Joseph Adams, M.D. F.L.S. Physician to the Small-pox and Inoculation Hospitals, and to the New Finsbury or Central Dispensary. 12mo. Pp. 161. Phillips, London, 1807.

The intemperate zeal which has been displayed, both by the friends and the foes of vaccine inoculation, in the discussion of its merits, has been the subject of just animadversion. But on a topic of such momentous importance to mankind, as the prevention of one of the most loathsome and fatal distempers with which they are afflicted, some degree of honest warmth in the cause of humanity is truly venial: it is at least less offensive to us, than the quiet complacency with which this equivocal amphibious production before us is ushered into the world. The force and extent of the evidence in favour of the security of the vaccine disease are amply sufficient, in our opinion, to impress conviction on any mind which is capable of viewing that evidence, in all its bearings, disinterestedly and without prejudice; and the report of the College of Physicians, which was satisfactory to the most enlightened assembly in the kingdom, may be adduced in support of the truth of our assertion. Is it not, then, truly melancholy to reflect on the present misguided state of the public opinion on the subject; to consider that the prejudices of the ignorant have been played upon, and their fears and weaknesses abused by hearsay occurrences, and distorted on suppositious facts; and, in the mean time, to observe that the pestilence of small-pox, which had, in a great degree, ceased its ravages, has again been disseminated through the country under some of its most malignant and fatal forms?

Contemplating
Contemplating the matter in this light, the reader will peruse the title-page of this little work with pleasure, as it obviously implies a pointed attempt to guide the public to a right consideration of the subject. But, in the sequel, he will be somewhat disappointed. The unity of design is nowhere found but in the title-page; and the work, like the hospital which the author superintends, is two-fold: one-half of it being dedicated to the discussion of the inoculation of the small-pox, and the treatment of that disease!—the other half only being set apart for the "popular view of vaccine inoculation!"

This is an extraordinary association of subject: the author, doubtless, took the hint, though he has not taken his motto from Cato.

"Thus am I doubly armed: death and life,
The bane and antidote are both before me."

But, whatever his motive or authority, the combination is to be condemned as most injudicious, not to say most inconsistent with the avowed design of the work. This is not a subject upon which half measures are to be pursued. The two diseases differ so essentially in one grand point, the production of contagion, that we do maintain, that no individual who is satisfied, as Dr Adams affirms himself to be, of the security of the vaccine inoculation, is justifiable in exciting, directly or indirectly, a favourable impression of any modification of the variolous infection. Our public duty in such a service is, beyond all dispute, paramount to personal considerations, and to complacency to individuals. It should never be absent from the recollection of any practitioner (it never can escape the recollection of the humane), that the small-pox is not only a loathsome and fatal disease, but that, in the mildest forms, it spreads around itself a pestilential contagion, destructive beyond all calculation: that every individual inoculated, may become the centre of a circle of disease and death; and that thus to disseminate the poison is voluntarily to perpetuate pestilence, and to consign our species to miseries which we have the power to avoid. Let us not, then, whatever we might do before the discovery of the benign and inoffensive cow-pox, when we had but a choice of evils, let us not sit down, cold in heart, to calculate the number of "prudent individuals," p. 5, who preserve themselves and their families by small-pox inoculation. The observation is now out of place; it should not have been admitted into Dr Adams’s book. The most prudent now will secure themselves, without diffusing a fatal malady among the multitude, not of the imprudent, but of those who are misguided by honest prejudices, and fall into well meaning errors;
errors; which prejudices and errors it should have been alone the business of Dr Adams to expose and correct.

After having stated two or three circumstances connected with the history of the small-pox, the author discusses, in Chapter II, "the causes to which we may attribute the advantages of receiving the small-pox by inoculation." The cow-pox is here not once alluded to. To explain the point in question, a mere hypothesis is adduced, which is neither very clear nor satisfactory. He attributes the severity of the disease to what he calls the first shock, which he seems to consider as confined to the face in the casual, and to the arm in the inoculated small-pox. But does Dr Adams know on what part the contagion first operates when casually received? and does not the general eruption also appear first in the face under inoculation? besides, are other eruptive diseases rendered less mild by inoculation, from any similar cause? It appears not, especially with regard to measles. We must therefore consider the fact as still unexplained.

Chapter III. treats of "the various kinds of small-pox, and on the approximation of the most favourable to the cow-pox." Here we begin to trace a source of the author's attachment to the small-pox, as we catch a glimpse of something like a hobby-horse. The author made a discovery of a particular variety of small-pox, which the nurses call the white sort, and he denominates the pearl sort. Having inoculated a certain number of children with the lymph taken from one of the pustules, or vesicles, of these pearl-pox, he inoculated a second number with matter taken from the mildest of the first, and so on, by successive inoculations from the mildest, he was at length enabled, he affirms, to propagate a small-pox, of the mildest nature, and, in the form of its vesicles, resembling the cow-pox. These observations would have been justly deemed valuable ten years ago: but now, when all this mildness, and more than this, is attainable in the cow-pox, without pestilential effluvia, the publication of such a fact, whether true to any extent or not, is to be lamented as an evil; for small-pox is still small-pox, as to its contagion, whether in the shape of a confluent scab, or a pearly vesicle.

Having shewn the approximation of the variolous to the vaccine vesicle, when thus nursed, Dr Adams proceeds, in the following chapter, to bring forward "presumptive proofs, deduced from the laws of all other morbid poisons, that the variolous and the vaccine is the same," p. 37. He states the general fact, that two diseases excited by specific contagion, cannot exist at the same time in the same individual; and that if the virus of measles and small-pox, for example, be inoculated together, the one disease will be suspended, until the other has completed its course, when it will
will commence, and go through its course, independently. But if the small-pox and cow-pox virus be inserted at the same time in different parts of the same individual, there is no interruption whatever in the progress of either disease. Farther, the fact, which was first observed by Dr Woodville in regard to small-pox, that a second inoculation three or four days after the first, will produce a mature pustule at the same time with the first, is strictly true with respect to cow-pox. Lastly, "if small-pox is inserted to-day, and the same subject inoculated three or four days after with cow-pox, or with cow-pox to-day, and three or four days after with small-pox, the same consequences will follow as if both insertions had been of small-pox only, or of cow-pox only; that is, each will arrive at maturity at the same time."

p. 42.

Now it appears that if the action of the cow-pox virus prevents the action of the small-pox virus, it must be admitted, that its operation on the constitution is the same as that of the latter; as the effect of the operation of both is the same. This is necessarily implied in the notion of the preventive power of the vaccine disease. But this reasoning of the author proves nothing more. And he feebly attempts to explain away the difference of the two diseases, in regard to the non-production of secondary pustules, and of contagion, in the cow-pox. The origin of the latter he does not notice. While these marked differences, however, exist, it is an abuse of language to say they are the same, notwithstanding that in one or two leading points they may coincide. If the author really meant to advocate the cause of vaccination, he appears to us to have fallen upon the most injudicious and unfortunate mode of executing his purposes that could be conceived. He first represents the small-pox as stripped of all its individual horrors, and possessing the mildness and actual character of cow-pox,—no inconsiderable recommendation to those who are doubtful of, or prejudiced against the cow-pox; and then he represents the latter as being, in fact, the same disease as the former. Now we cannot but believe, that to contend for this assimilation of the two diseases, is to maintain, though unintentionally, the most dangerous, because the most insidious, hostility against the salutary practice of vaccine inoculation.

Dr Adams goes on through three chapters more to treat of the small-pox, in one of which he details minute instructions, as to "the mode of conducting small-pox inoculation," and, in the other, as to "the prognostic symptoms of that disease." We cannot discover the necessity or propriety of giving all this information to the public, in a work professedly written to illustrate the superiority of the cow-pox.
Arrived at the 71st page (the treatise terminates at page 131), we, for the first time, find our author's attention directed to the advantages of the cow-pox; and here, too, for the first time, he seems to have recollected, that inoculated small-pox "has sometimes proved formidable," and that it "is always attended with an uncertainty as to the mischief we may spread around us." p. 72.

And he now discovers how happy we are in the possession of the cow-pox. "Without symptomatic fever, without secondary eruptions, or without danger from either, and also without danger to others, we secure ourselves, our children, or friends. No season need be preferred, no age is improper, and no state of health has been found prohibitory." Yet he has just been attempting, for what purpose we know not, to reason us into a belief that the two diseases are essentially the same!

In answer to "the first and most important of all inquiries, does cow-pox introduce dangerous diseases into the human body?" p. 73. the author simply adduces the robust health of dairy maids, who receive the virus in its full force. He then impugns the disgusting and "highly disgraceful" expressions of impurities in the blood, the evil, or scrofula, and such undefined terms, which have been applied to those individuals in whom any untoward accident has happened after vaccination. The fair inference from these facts, he says, is, that such accidents are to be imputed "to such a peculiarity of constitutions as to be affected by these substances (the variolous and vaccine fluids) in a manner which could not be previously known." p. 84. This is, doubtless, the more just and philosophical way, not of explaining the facts, but of confessing our ignorance; it is certainly not more definite than those vague terms which Dr Adams has censured.

The author devotes Chap. X. to "the next," surely the first and most important object of inquiry, "Is vaccination a security against the small-pox?" This is well argued. Dr Adams admits, what is now indubitable, that cases of small-pox succeeding to cow-pox have occurred. They have occurred, he says, under two different forms. In by far the most numerous instances, the small-pox, after the cow-pox, have appeared so mild and so deficient in the true variolous character, (turning on the 5th or 6th day, &c.), as to excite doubts of the reality of the disease. But its identity has been proved by inoculation from it. In a very few cases the small-pox which occurred subsequent to the vaccine pock, were severe as usual, in one or two instances fatal. Now the author maintains, that cases of second small-pox, after small-pox have already been suffered, occur as frequently as these severe cases of small-pox after cow-pox. This, he believes, would
would never been doubted, had we not unfortunately been in
the habit of estimating the security of a patient by the severity
with which he has passed through the disease. And he has no
doubt that, before the discovery of vaccination led to a more ac-
curate discrimination of eruptive diseases, the mild and imper-
flect small-pox, above described, have frequently occurred after a
first small-pox; but they would then pass unnoticed, or remain
at least doubtful, or be considered as chicken-pox. Dr Adams
quotes the first edition of his book on *Morbid Poisons*, published
in 1795, to show that the fact of small-pox occurring twice in
the same person was at that time admitted. He also transcribes
a case from the Memoirs of the London Med. Society, Vol. IV,
p. 186, published in the same year, in which a man, who, when
a child, had a severe small-pox, together with three others in the
family, of whom one died, and who was remarkably pitted and
seamed by the severity of the eruption, was attacked with small-
pox again, at fifty years of age, in a confluent manner, of which
he died. Four of the family took the contagion from him in this
second attack, one of whom, his sister, also died.

It has been objected against vaccination, that the signs of secu-
rit} are uncertain. But Dr Adams contends that there is not
more uncertainty in the vaccine, than in the variolous eruption,
and he quotes a paper from the Medical Transactions, Vol. III,
in which a very intelligent practitioner relates two examples of
variolous pustules, from inoculation, which appeared to him in
all respects satisfactory, and from which nineteen persons were
inoculated, and went through the disease. The two children,
however, had no constitutional disease; they were, therefore, by
the desire of the parents, inoculated again, sickened, and had a
considerable eruption of pustules in the ordinary way. In con-
ducting vaccine inoculation, “the most important consideration,”
Dr Adams says, “is carefully to avoid using fluid in the smallest
degree turbid. True vaccine fluid is so perfectly transparent,
that on fine glass, or even on the point of a fine lancet, it cannot
always be perceived.”—“It is generally thought best to take the
fluid before the eighth day; but when this is done, the vesicle
from which we take it should be watched till scabbing, for if with-
out other violence than the above puncture, the contents should
become matter, or the scab soft, we ought not to depend on the
issue of our vaccination, but to take another opportunity of re-
peating it.” p. 112. The following description of the progress
of the vaccine vesicle is the most valuable portion of the volume.

“On the following day it will sometimes not be easy to ascertain
whether our inoculation has succeeded; but on the next, being the
third, inclusive of the day of inoculation, you may perceive a red point, which, being pressed by the finger, will give the sensation of a very small hardness immediately under the skin. On the fourth day the point should be increased, and somewhat shaded or irradiated. On the fifth a small vesicle or bladder may sometimes be perceived with the naked eye. On the sixth, with still more certainty. This is gradually increased in size, the base rarely exceeding the summit, till the eighth or ninth, when the almost level summit will, for the most part, exceed the base. During the whole progress, a small indentation will usually appear, preserving the form of the incision.

"Hitherto the appearance is very similar to the small-pox, and in some cases cannot be distinguished from it. But from this time the difference is easily marked, excepting in one kind of small-pox, which has been already noticed. In all others, the inoculated part, however regular it may have proved till the eighth or ninth day, now becomes jagged at its edges, and its contents grow more or less purulent. In the cow-pox, the circular form continues, or if, from the length of the puncture, the form should be more oblong, still the edges will be well defined, the contents remaining limpid.

"The external skin seems to thicken as the vesicle acquires its full size, and gradually approaches nearer to the amber colour. At other times the skin seems more transparent, and shews a blue tint beneath it. On these occasions the vesicle is flatter. This difference appears to arise from a higher degree of inflammation, in consequence of which the surface below is fuller of vessels conveying red blood, and affords a purplish appearance through the cuticle and lymph.

"On one of these, or the following day, a considerable redness appears round the vesicle; this has been very properly denominated by Dr Jenner the areola, or small area, round the vesicle. If this redness, or areola, has a well-marked edge at the extremity, it never exceeds the boundary it first formed for itself; but if it is deepest immediately round the vesicle, and shaded from thence, its extent is much more uncertain; though, from the eighth or ninth day, the skin appears to thicken, and the vesicle to flatten, excepting round the edge, yet the contents are still limpid. The edge now forms a rim higher than the centre, so that the whole has been very well compared to a ripe mallow-seed. The surrounding redness ceases from day to day, the margin of the mallow-seed shrivels, the centre acquiring a crustaceous, and afterwards a stony hardness, at the same time gradually contracting itself, particularly round its extremities, so that the centre is generally most elevated, and the whole scarcely fills the little cavity in which it is contained. In this state it has been compared to a tamarind stone. This illustration, though for the most part correct, is less so than that of the mallow-seed, because the appearance of the scab is more various. It is, however, if uninterrupted, constantly stony, but varies in colour as much as the different shades of mahogany. In this state it remains sometimes for two or three weeks, and when it falls off, leaves a scar, which, though not so deep,
has, in all the cases I have seen, proved permanent like the small-pox. From the latter it differs not only in being more superficial, but in being marked with small and somewhat regular indentations." p. 112-18.

During the progress, Dr A. recommends a purgative about the sixth day, to be repeated according to circumstances, whilst the areola is forming. "Two or three gentle purges," he says, giving Priscian a broken head by the way, "at the interval of a few days, is never hurtful to a strong subject." With delicate children some caution is necessary. We apprehend that this purging is recommended rather in compliance with old humoral prejudices, than from experience of any ill effects from the omission of it.

The concluding chapter treats of some "deviations from the customary laws of vaccination." Whenever it is difficult to ascertain on the third day, by the marks before described, whether the inoculation has proved successful, the general health should be examined. If there is any feverishness, probably some other eruptive disease is coming on. At all events, the inoculation should be repeated; and it will often happen, that the first will now begin its progress, and both will go through the regular stages together. Sometimes after proceeding regularly to a certain height, the inoculated part will suddenly assume a purulent appearance: whenever such purulence comes on, from whatever cause, it is absolutely necessary to vaccinate again. The constitution cannot be secured unless the vesicle has gone through all its regular stages. These are the cases which have brought vaccination into the greatest discredit.

If we have extended this article to a length disproportionate to the value of the work before us, the great importance of the subject must plead our excuse. Did we not know how much interest has concurred with prejudice in fostering the fatal and never-dying pestilence, and that its frequency has made its ravages familiar, its cherished existence, when an antidote is in our power, could not "overcome us, like a summer-cloud, without our special wonder." It will now, however, be a work of time to eradicate these prejudices from the public mind; and we feel it our duty to condemn, in the mean time, in the severest terms, every work that tends, directly or indirectly, to encourage those prejudices, by representing the small-pox in a favourable light; and more especially when this representation comes upon us where it is not expected, from a professed friend of the cow-pox, and in a professed treatise in favour of the latter disease alone.

An appendix contains the report of the College of Physicians, &c.; and six plates are subjoined, representing the progress of the vaccine vesicles, and the pearl small-pox.