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AN

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ERUPTIVE DISEASES

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THE MILITARY HOSPITALS OF EDINBURGH,

BOTH NATURALLY AND AFTER INOCULATION;

AS THEY HAVE AFFECTED CHILDREN AND ADULTS,
SOME OF WHOM HAD PREVIOUSLY HAD SMALL-POX,—SOME WHO HAD BEEN PREVIOUSLY SUBJECTED TO THE COW-POX,—AND OTHERS WHO NEVER HAD EITHER OF THESE DISEASES.

COMMUNICATED IN A LETTER TO DR DUNCAN, JUNIOR,

By JOHN HENNEN, Esq.

DEPUTY-INSPECTOR OF MILITARY HOSPITALS FOR NORTH BRITAIN.

[From the Edinburgh Medical and Surgical Journal, No. 56.]

An Account of the Eruptive Diseases which have lately appeared in the Military Hospitals of Edinburgh, both Naturally and after Inoculation; as they have affected Children and Adults, some of whom had previously had Small-pox, some who had been previously subjected to the Cow-pox, and others who never had either of these Diseases. Communicated in a Letter to Dr DUNCAN, jun. By JOHN HENNEN, Esq. Deputy-Inspector of Military Hospitals for North Britain.

MY DEAR SIR,—It would be an egregious piece of affectation in me did I pretend to come reluctantly before your readers on the present occasion; for both in my official, and in my domestic capacities, I am very highly interested in the determination of the question as to the nature of the diseases which I am about to describe; and I am most anxious to give their history every possible publicity, in order to collect the sentiments of unbiassed professional men, on a point of such vital importance to society, as the distinctive marks between the small-pox and the aggravated cases of chicken-pox, &c. so often confounded

with it; a distinction which may seriously involve the value of the most important of all modern medical discoveries, the Jennerian plan of counteracting the ravages of variola, and implicate the happiness and the lives of thousands in this and every other country of the globe.

The following cases have already excited great curiosity; they have been seen by a large and most respectable body of private practitioners; accounts of them have been widely circulated in letters and conversations, and some of them I have, at Dr Monro's request, given to him for insertion in his work. Much error and misrepresentation may, however, have got abroad in the oral and epistolary accounts of them, and only a very few of them are to be found in the publication of Dr Monro; neither can the chain of events, both antecedent and subsequent, have been so completely kept up in his book, or in the occasional notes taken by other individuals, as I have been enabled to do, from my continued inspection of all the patients, and from my being in possession of the complete series of the hospital records, and of every other source of information which can throw light on a subject so obscure, and involved in so many difficulties. Under these circumstances, therefore, I consider it by far the most likely mode of arriving at just conclusions, and of satisfying the minds of the public, and the doubts of individuals who may be in possession of only some detached facts, and even these, perhaps, not stated with perfect correctness,—to submit at once to the profession the entire series of cases, consecutively and uninterruptedly, as they have occurred. I here beg leave to take an opportunity of again expressing, what I have already done elsewhere, that I shall feel on all occasions the greatest pleasure in seconding the views of my respected chief, Sir James M'Grigor, the Director-General of the Army Medical Department, by throwing open the wards of the military hospitals under my control, and submitting the records of the practice followed in them, to my brethren in civil life, accepting for myself and the military practitioners who act along with me, the benefit to be derived from a mutual communication of professional opinions.

It will be necessary for me, before entering upon the history of the cases, to make a few preliminary remarks. It is well known that Small-pox has for some time past existed in this city and its neighbourhood, both under its usual and its modified forms; and your last number has already furnished us with some highly interesting and important details upon the subject. Varicella also has existed at the same time in a genuine and unequivocal form. From the co-existence of these two diseases, and from the great difficulty that is frequently experienced in dis-

tinguishing between them, especially where the previous history, and all the concomitant circumstances of the cases are not taken into consideration, the principal interest of the following narrative is derived.

From the decided part which his Royal Highness the Commander in Chief early took on the subject of vaccination, and from the universality of its adoption by army practitioners, Small-pox has become a disease of very rare occurrence in military life. It has raged around our camps and barracks, and carried off its victims from under our very walls, and even from the houses where our detached troops have been quartered, while it has left them and their families unmolested. In Scotland this exemption has been no less remarkable than in other parts of the empire, and, for the last two years, I do not find one case of Small-pox mentioned in the records of the military hospitals of this city; neither has Varicella occurred within the same period in these hospitals. One man, however, was received into the depot hospital at Queensberry House, from the Castle barracks, labouring under the latter disease, on the 14th of May last. He asserted, on a general examination of the depot some time before, that he had had small-pox. No very decisive mark of them could, however, be traced on him, and his name was noted, in order to his being vaccinated, but before that operation was performed, he was seized with the varicella. After his dismissal from hospital, the vaccination was performed; but the vesicle did not satisfy Dr Bartlett, nor had the man any constitutional affection. From an examination of all the circumstances of this man's case, it is rendered probable that his assertion with regard to his having previously had small pox, was perfectly correct.

In three days after the above individual had been admitted into hospital, an unequivocal case of Small-pox was received. It occurred in a Highland soldier belonging to a recruiting party, who had never had the disease before, and who had obstinately resisted all the persuasions that were employed to procure his submission to vaccination. This man had been for a long time previously confined to the hospital, in consequence of a tedious ulcer on the lower part of the parietes of his abdomen, and had been only dismissed a few days before to his quarters in the Grassmarket, when he was taken in a second time labouring under the small-pox, which it appears were prevalent in the near vicinity of his residence.

In order to give perfect satisfaction as to the nature of the complaints under which both these men laboured, I shall give their cases in the numerical order of their admission. The

case of Varicella, therefore, will stand No. 1 of the succeeding series, and that of Variola No. 2.

On the 17th of May, a child of the hospital serjeant's, who had been vaccinated in Ireland in 1811, and who has two very perfect cicatrices on his arm,* was taken ill with a disease, which I at first conceived to have been modified small-pox, but which, on consultation with Professor Thomson, Surgeon to the forces in charge of the Queensberry hospital, I afterwards considered as varicella. This child I did not see before the 20th of the month; the heads of his case will form No. 3 of the series. His brother, a boy of 11, who had been vaccinated at three months old, and who has a perfect cicatrix, escaped all complaint whatever.

On the 6th of June, a recruit was admitted into the same hospital, from his billet in the Grassmarket, whose case Dr Thomson, for the first two days, conceived to have been varicella, but which he afterwards considered, and reported as affording in its progress, maturation, and decline, a good specimen of the modified small-pox, so well described by Dr Willan, and of which several interesting cases are reported in the 55th Number of this Journal, as having occurred in Edinburgh during the preceding six months. The subject of this case has a cicatrix of variolous inoculation on his arm; from twenty to thirty pits of small-pox are observable on his body; and he says that he passed regularly through that disease from inoculation, before he entered the army. His case is marked No. 4.

These four cases show the entire progress of disease as it was treated at, or originated in, the depot hospital at Queensberry House.

On the 9th of June, a child of my own, who had been vaccinated upwards of ten years before, and who went through the disease most satisfactorily, and now has two perfect cicatrices on his arms, took ill; his case forms No. 5 of this series. His younger brother, who had been vaccinated eight years ago, and now exhibits one perfect cicatrix on his arm, was also ill some days before, but so very slightly, as not at the time to have attracted any particular attention. Both these boys, after coming from school, had occasionally played in the hospital airing ground, and in the reading room and hospital serjeant's rooms, while all the preceding cases were under treatment. Three

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* By perfect cicatrix, I understand a permanent circular cicatrix about five lines in diameter, and a little depressed, the surface of which is marked with very minute pits or indentations, denoting the number of cells of which the vesicle had been composed.

older members of my family, two of whom had been vaccinated upwards of 14 years before, and the other had had small-pox, escaped all disease whatever, although the last slept in the same room, and for some time in the same bed with the sick boy, and one of his vaccinated sisters had been in constant attendance on him. The case of my son No. 5, I at first considered as an instance of aggravated varicella, and under that impression, I delivered to Dr Bartlett of the 88th regiment, four lancets charged with lymph from his body, for the purpose of ascertaining by experiment, some points in the natural history of that disease, which are still in obscurity, notwithstanding the observations of the late Drs Willan and Heberden. Mr Bryce, however, and Dr Monro, who saw my son after the lymph taken from him had been inserted into the arms of six children who never had had small-pox, cow-pock, nor varicella, and who were selected as the most proper subjects for trying an experiment upon, at once pronounced his case an example of the modified small-pox with which Dr Monro's children had been affected. It may well be imagined what a strong degree of interest was excited by this circumstance. The experiment, highly important in itself, if the disease communicated were purely varicella, became doubly so on the supposition that it should turn out to be small-pox; for we had been taught to believe that the modified small-pox produces the real disease in persons who have never gone through it before, or who have not been previously vaccinated; but that it still retains its modified character in persons who have previously undergone either of these diseases.

The results of these experiments are given with great minuteness in the following cases from No. 6 to No. 11 inclusive, and from them the first appearance of the eruptive diseases in the Castle takes its date.

On the 7th of July, the 24th day after the children were inoculated, an adult soldier who slept in the room with, and often nursed one of these children, (Hughes, No. 8.) was taken into the Castle hospital. His case forms No. 12. of the succeeding series.

On the 12th of July, another adult soldier, who had nursed the child O'Neil (No. 6.) during the progress of its disease, was taken into hospital. His case forms No. 13. of the succeeding series.

On the 17th of July a third adult soldier, who slept in the same room with, and on the upper tier of the same bed with the child M'Dermott (No. 11.) was taken into hospital. His case is marked No. 14. of the succeeding series.*

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* Some of the barrack bed-steads are of two tiers, for two men in each tier. The rooms are not crowded; they are well ventilated, and kept critically clean.

These three men exhibit several marks of previous small-pox, particularly the last, on whose arm there is the cicatrix of the inoculation, and they all recollect their having had the disease.

Besides these persons, one adult and three children were also taken ill in the Castle during the early part of the month of July; the adult so slightly, as never to have been received into hospital, nor to have omitted his duty for a single day. He says he had small-pox twenty-four years ago, and bears the mark of inoculation, as well as of several pits of that disease. A very few pustules, of a horny nature, appeared on his face, breast and arms, preceded by a smart degree of fever of short duration, and dried up rapidly in four or five days. This man slept in the same room with two of the inoculated children—Hogg, the very severe case, and Conolly, one of the slighter, (Nos. 7. and 9.) Of the children, one of eighteen months old, who had been vaccinated about 15 months before, and exhibits a perfect cicatrix, had a slight feverish attack, succeeded by a few pustules of the same horny nature as the adult, which soon dried up. This child was on the same floor, but not in the same room with the inoculated children Hughes and M'Dermott. (Nos. 8 and 11.) A second child who had not been vaccinated, an infant of three weeks old, who was nursed by the mother of the inoculated child Conolly, (No. 9.) and who slept in the same bed with it, had, at the same time with the adult and the first mentioned child, a disease of the same slight character and short duration as they had. But a third child, of twelve months old, whose parents had neglected to bring it forward for vaccination, had, at the same period, a very severe disease, resembling that of the inoculated child Hogg, (No. 7.) This child slept in the upper tier of the same bed with the inoculated child Conolly, (No. 9.) and its father is the adult mentioned at the commencement of this paragraph, as having had small pox in his youth, and having been so slightly affected with the eruptive disease. It would be quite superfluous to give the minute details of these last cases.

I had flattered myself that the disease had altogether ceased, as no fresh case was reported from the 17th of July; and I proceeded to inspect the Hospitals at Glasgow where measles had made their appearance, when, on the 4th of August, I received intimation from Dr Bartlett, that a soldier who was then and had been for some time previously in the Castle hospital, and on whom I was about to perform the operation for artificial pupil, had been seized with a febrile attack, which the doctor strongly suspected was the eruptive fever of small-pox. This man had represented himself on his enlisting from

another corps into the 88th in France, as having had small-pox, and there were some marks upon his body, which, in conjunction with his assertion, were sufficient to justify the surgeon in considering him as having passed through that disease. He has, however, since confessed, that he never had had the small-pox, and that when a sister of his had the disease, he had been kept separated from her by his parents This imprudent man was in a ward on the same floor with the adults, Nos. 12, 13, 14, and only separated from them by a narrow passage, and he had even conversed with one of them during the continuance of his disease. The case terminated fatally on the morning of the 13th day of the eruption; it forms No. 15. of the series, which will I trust convey to your readers, a sufficient view of the rise, progress, and, I hope, termination of the eruptive disease among the troops in this city. That this man's disease was genuine small-pox, no one who has seen him expressed the least doubt.

It obviously would be presumptuous to assert with perfect confidence, that all these cases have sprung from one and the same source, although there is the strongest reason to suppose that they did. It is most probable that my son's disease originated in one or other of those at the depot hospital at Queensberry House, and from him we are enabled to say with certainty, that the disease of the six inoculated children proceeded. The presumption is, that from some of these last, the subsequent cases of the adults, Nos. 12, 13, and 14, took their rise, although there is a *physical possibility* that they might have caught their disease elsewhere, from the frequent communication which necessarily takes place with the outside of the Castle walls, where small-pox exists. It is also highly probable that the adult, his child, and the two other children, mentioned as having taken an eruptive disease, but whose cases are not given at length, derived their disease from the inoculated children also. Finally, that the last man caught his complaint from the adults in the hospital with him, is as nearly certain as any circumstance of a similar kind in the history of the progress of contagion, can be.

I have already stated, that the inoculation was instituted under the impression that the disease to be communicated was Varicella. When, however, I saw the first adult, No 12, take a disease which spared neither the vaccinated nor the variolated, and which I myself and many eminent gentlemen of this city conceived to be a form of small pox, I at once put a stop to all further experiments among the troops, and took immediate measures to have all the children in the barracks vaccinated, who had not already gone through that most important process. This was not only consonant to my own opinions on the subject, but

it was what I should have done, even if any doubts had existed much less strong than those which I entertained; or indeed as I should have done in any case, where the eventual loss of life might have followed the gratification of curiosity.

I tried, however, upon myself, what I did not choose to do upon the soldiers whose health is committed to my care. From the child O'Neil (No. 6.) I inoculated myself. I had had small-pox, but never varicella. No result followed. Dr Bartlett, who had also had small-pox, but not varicella to his knowledge, tried the same experiment with a similar result; and I understand it was also tried by Dr Farquharson of this city, with similar consequences, and under the same circumstances. These, to be sure, are negative trials.

Dr Bartlett, in order to throw some further *positive* light on the natural history of varicella, inoculated seven children who had neither had cow-pock, small-pox, nor chicken-pox, with lymph taken from a child of Mr Wishart, surgeon of this city, who laboured under genuine unequivocal varicella. No disease was produced in any of the children thus inoculated.

Another trial of inoculation was made by Mr Bartlett, jun. upon himself, with the matter of the disease under which the adults laboured, taken from the case Delany, No. 13. Mr Bartlett had had small-pox, but not varicella to his knowledge. No result followed.

But although I stopped all positive trials among the troops, I have not crushed all future experiments; for I have in my possession several charges of matter, taken with every possible precaution from the body of Redmond, No. 12, with which, if it may be deemed desirable, I shall myself perform, or deliver to any other properly qualified person to institute, experiments, in some situation where less danger is to be apprehended than in a crowded barrack.

Another experiment still remains to be performed, viz. the testing the six inoculated children with unequivocal variolous matter, when they can be placed under such circumstances that, if they do take that disease, its propagation may be prevented, as far as human means can prevent it.

I have not commenced this paper by announcing the cases it contains as cases either of Varicella or Variola, whether in their genuine or their modified forms, because the history of the contagion is wrapped in great obscurity, and most serious differences of opinion have arisen about its nature; and where any dissent, however trifling, occurs among gentlemen of such high rank in their profession as those who have seen the cases, I could not pretend to obtrude my private opinions, or my reasons for adopting them, cogent as they may have appear-

ed to myself. I should not, indeed, even have mentioned my sentiments with regard to the case of my own son, were it not to shew under what impression I instituted the first inoculation; and I should have been equally silent with regard to the opinion I have adopted of the nature of Redmond's case, were it not to offer a reason, which to myself is perfectly satisfactory, and which, I trust, will be equally so to others, for putting a stop to all further experimental inquiries for the present.

But while I withhold my positive opinion, and give place to the many eminent men who entertain contradictory sentiments upon these cases, in the justice and candour of my statements, and in the desire of fair and impartial investigation, I shall yield to none. I am the faithful narrator of truth, without having a theory or a prejudication to substantiate, by concealing or embellishing it. Where any thing has been stated from my own knowledge, or where any addition has been made by me to the reports of the surgeons of the hospitals, I have drawn up the statement, and verified its accuracy, by reading and re-reading it at the patient's bedside, and in presence of, and in conjunction with, several professional gentlemen; among them, yourself and Dr Monro, Dr Thomson, Mr Bryce, Dr Fergusson, Inspector of Hospitals, and Dr Hugh Ferguson, assistant Secretary to the Dublin Cow-pock Institution. And in all the other instances, I have read and compared the daily reports of Messrs Johnston and Bartlett, the medical officers of the 88th regiment, and can claim for them the same degree of confidence that I demand for myself. The latter gentleman who, in addition to his duties in the Castle, has also acted as a temporary assistant at the Queensberry Hospital, has been equally attentive to the cases Nos. 1, 2, 4, which were treated there, and which he has reported under the immediate eye of Professor Thomson, and to No. 15, which was, at its commencement, particularly under his charge. To him also I exclusively owe the whole of the cases of the inoculated children, which were daily and almost hourly visited by myself and a number of other medical gentlemen, both civil and military. The accuracy of Dr Bartlett's descriptions sufficiently speak for themselves, and to a great degree supply the deficiency of engravings, the enormous expence of which in this country, particularly as they refer to cutaneous diseases, amounts almost to a prohibition of their publication. Some drawings are, however, extant; views of the inoculated pustule on the arms of the children at the 9th day, were taken for me, and executed with his usual spirit and accuracy, by my friend Staff-Surgeon Schetky. These original drawings are lodged among the records of the army medical department in London,

which, under the liberal and scientific administration of Sir James M'Grigor, hold out the promise of immense future benefit to medical and surgical science. Several other drawings have also been executed under the direction of Dr Monro.

I shall now endeavour, without the aid of the pencil, to put your readers in possession of this very interesting series of cases, of which I may say with truth,

"Ornari res ipsa vetat, contenta doceri."

Case I.—William Wright, 26th regiment, aged 21. May 14th. Two days since, symptoms of fever shewed themselves, and this morning there is an eruption on the face and breast. At present the skin is hot and dry; his pulse 100, and pretty full; tongue white, thirst, and anorexia; bowels costive. The eruption consists of distinct papulæ, with inflamed bases, and is principally confined to the forehead, sternum, and back.

Sumat protinus submuriat. hydrarg. gr. vi. et post horam sodæ sulphatis ℥j. Diet, spoon.

15th.—Febrile symptoms are more moderate; the papulæ have become vesicles, and possess all the characters of varicella.

Repet. medicamenta, et hab. pro potu commune solut. potassæ supertart.

16th.—Skin more natural; pulse 90; thirst less; slept well, and feels much better; one or two of the vesicles are ruptured.

Contin. solut. potassæ supertart.

17th.—Pulse and skin natural; appetite returned, and he feels in every respect well; with the exception of one or two, the vesicles have all ruptured, and formed crusts.

Omitt. medicamenta. Half diet.

18th.—In every respect free from complaint. Discharged.

Case II.—John Macleod, 78th regiment, aged 25. May 17th. Four days ago symptoms of fever manifested themselves, and yesterday morning an eruption of papulæ over the face and back, extending in some degree to the extremities. The papulæ are confluent on the face, collected into clusters on the extremities, and distinct on the trunk; they are large, but little acuminated, and of a pearly hue; the heat of skin is not much above natural. Pulse 84; little thirst; no nausea or pain on pressing the epigastrium. Bowels were opened freely yesterday by a dose of neutral salts.

Teneat. in cubiculo quam frigid. cum tegumentis lecti perpaucis.

Admitt. liberrime aer frigidus.

Abluat. corpus aqua egelidâ.

Habeat pro potu commune solut. potassæ supertart. Diet, spoon.

18th.—Febrile symptoms very moderate; vesicles beginning to form on the apices of the papulæ.

Repet. sodæ sulph. ℥j. Contin. potus.

19th.—Slept tolerably; has little febrile symptoms, though the eruption is very confluent; the eyes are considerably inflamed.

Contin. potus.

20th.—Some increase of the febrile symptoms this morning. Pulse 90, and full; thirst; eruption passing into the pustular state.

Sumat calomelanos gr. vi. Contin. potus.

21st.—Did not sleep during the night from the itching and pain of the pustules. The eruption is now completely pustular, and on the chin has formed crusts; the conjunctiva of both eyes is inflamed from pustules on the tarsi. Pulse 98, strong and full; thirst; bowels costive. Sumat olei ricini. ℥j.

App. collyrium solut. plumbi acetatis.

22d.—Slept very indifferently. Pulse is 100, strong and full. He is thirsty; his tongue is furred; and he feels great smarting pain from the eruption.

Contin. potus acidul. et collyrium.

23d.—Passed an uneasy night, and complains much to day of smarting pain from the pustules; his pulse is 120, strong and full; thirst is considerable; tongue white; the crusts are formed over the chin and forehead; on the extremities the pustules are still entire, large, white, and prominent.

Repet. calomel gr. vj. Contin. collyrium.

24th.—Passed a restless night, but feels better this morning. Pulse down to 90, and soft; tongue moist; less thirst. Desquamation has begun in the face, and incrustation is going on over the body.

Sum. nocte haust. anodyn.

25th.—Passed a better night, and feels better this morning. Pulse 100, but soft; little thirst; incrustation is going on. Eyes free from inflammation.

Repet. calomel gr. vi. Cont. collyrium. Repet. nocte haust. anodyn.

26th.—Passed a good night, and feels better to-day; his pulse is 90, and soft; tongue moist; appetite begins to return; incrustations almost finished, and in many places the crusts have separated.

Repet. haust. anodyn. Descendat in baln. tepid. vespere.

27th.—Passed a good night, and continues to improve; had two loose stools yesterday, but to day his bowels are quite natural.

Repet. balneum et haust. ut heri.

29th.—Most of the crusts have come off; he sleeps well; his bowels are regular, and appetite improves.

Repet. haust. et balneum.

31st.—May be pronounced convalescent.

Repet. haust. h. s.

June 3d.—Convalescence going on slowly.

Pilul. opii, h. s.

5th.—Within the last day or two, eight or ten phlegmonous abscesses have appeared on different parts of the body; in other respects the convalescence goes on well.

App. cataplasmata.

7th.—Convalescence going on well; the abscesses have ulcerated and discharged their contents.

9th.—A few fresh abscesses have appeared; in other respects he is going on well.

11th.—Convalescence going on slowly.

13th.—Only one abscess remains, which has not discharged its contents. Convalescence going on well.

15th.—Convalescence going on slowly; appetite better.

17th.—Abscess opened; convalescence very gradual, but without any bad symptom.

19th.—Convalescence proceeds more rapidly.

From this period no farther reports have been made. His diet was gradually increased during his convalescence; and during his febrile state he was plentifully supplied with diluents, and occasionally with sowens or oranges, &c. He is now (August 10th) perfectly recovered, but considerably marked with the small-pox, and the stains of the pustules which have not pitted, are still very evident.

CASE III.—Before giving this case, I must premise, that, as the child was not an hospital patient, no regular or daily notes were taken of his disease, but to the fidelity of the general outline I pledge myself, as both Dr Thomson and I made the most minute inquiries from the parents, who are both intelligent persons, and verified them by our own observations.

THOMAS WILLIAMSON, aged 7, had been vaccinated by the surgeon of the 72d regiment, in Ireland, in the year 1811. On the 17th of May, a day which the mother perfectly recollects, as having been Sabbath, this boy first appeared ill. On the 20th, in the afternoon, I first saw him with a pustular eruption on his face, consisting of about thirty very perfect but small pustules, and about the same number of more imperfect vesicles on his body and legs, the greater part of which, the mother told me, had come out during the preceding night and that morning. He had very smart fever, with pain at the epigastrium on pressure, but no vomiting, and his eyes were considerably suffused.

I certainly took the case, from the appearance of the *pustules*, and from small-pox being in the house, for an instance of modified small-pox, and mentioned it to Dr Thomson that evening. He saw the child with me on the 21st, and by referring to the date of the arrival of Wright (Case No. 1.) in hospital, and from the appearance of the *vesicles* on the child's legs, as well as from the eruption having been increased by *fresh crops coming out in succession*, according to the mother's report, he was of opinion, that, however strong the resemblance might be to modified small-pox at the first glance, yet from a consideration of all the circumstances of the case, it should be considered as one of varicella. I did not see this child again, being employed on other duties, but by the 24th, the ensuing Sabbath, all the pustules and vesicles were dried up, and the child went to play as

usual. The treatment consisted of an occasional purgative, acid diluents, and cool air.

His brother, the only other child in the house, who had been vaccinated eleven years ago, when three months old, escaped all disease whatever.

CASE IV.—JAMES STERLING, 74th regiment, aged 19. June 7th. Was brought to hospital last night, when he complained of febrile symptoms which had appeared five or six days before. As nausea was a very prominent symptom, on his admission he was ordered an emetic, by the operation of which much bilious matter was evacuated. To-day he complains much of headach, and a sense of being bruised in his limbs; his skin is hot and dry, the pulse 110, and rather small; he has much thirst; his tongue is much loaded, and his bowels are costive.

Sumat calomelanos gr. vj. et post horam sodæ sulphatis ℥j.

Habeat solut. potassæ supertart. pro potu commun.

8th.—Medicine operated well; he feels lighter, but still complains much of his head and limbs; the face is much flushed; eyes somewhat suffused; skin very hot and dry; pulse 106; much thirst.

Affusio frigid. Sumat calomel. gr. viij. et cont. solut. potassæ supertart.

8 P. M.—Felt much relieved of the headach and heat of skin after the cold affusion; the pulse also came down to 90, and at present is not higher; the skin is also cool, and thirst less.

Sumat pulv. antimon. gr. vi. Pediluvium.

9th.—He passed a tolerable night, but did not perspire, nor was he hot. Headach quite gone; pulse 72; thirst much less; tongue not so much loaded; bowels freely opened; he has an eruption of papulæ on the face, trunk, and extremities, which, did he not bear marks of variola, might be taken for that disease. It is probably varicella.

Contin. potus supertart. potassæ.

10th.—Papulæ more numerous and prominent; febrile symptoms fully as moderate as yesterday.

Sumat calomel. gr. vi. Contin. potus.

11th.—Passed rather a restless night, and feels some return of his headach to-day. Pulse 80, and soft; tongue still loaded, but not parched; little thirst or heat; bowels were not opened yesterday. The eruption is more numerous, collected in several parts of the body into confluent circular patches; on the apices of each of the papulæ, pearl-coloured vesicles have formed, which are in some instances depressed in their centre, in others acuminated; bases but slightly inflamed.

Sumat sodæ sulphatis, ℥j. Cont. potus acidulat.

12th.—The eruption is more numerous; but not altered in character; the fauces are inflamed, and studded with vesicles of the same

kind as those on the skin. He passed a bad night; bowels not yet opened; pulse calm; heat moderate.

Sumat calomel. gr. viij., et post horam magnesiæ sulphat. ℥i.
Utet. gargarism. astring.

13th.—Passed rather a better night, but complains of a good deal of smarting from the skin; face is rather more flushed, and eyelids tumid; bowels have been freely opened; the eruption is more prominent, and the contained fluid has acquired a yellowish colour; the bases also are more inflamed.

Contin. potus acidulat. et si calor supra modum surgat, ablutio frigid. adhibend.

14th.—He felt considerable relief from being sponged over, which was twice done. He passed rather an uneasy night, but the pulse is calmer than yesterday; the skin cooler, thirst less, and he has some return of appetite. Some of the pustules on the face have begun to form crusts; on the extremities they are still entire and turgid.

Habeat mistur. salin. effervescen. ter quaterve in die.

15th.—Passed rather a sleepless night, but he says he is much better to-day; the skin is cool; pulse calm, and moist; appetite has returned; his face is not so red, nor so much swelled, most of the pustules on it have formed crusts. On the body and extremities the pustules are very large, globular, and quite turgid; none of them have yet formed crusts.

Contin. gargarisma, et si alvus non ante noctem descendat, habeat calomelanos gr. vi.

9, P. M.—As he complains much of smarting pain from the pustules, and has had restless nights, an anodyne may be administered; bowels opened.

Sumat tinct. opii gtt. l.

16th.—Slept well, and says he feels much easier to-day. Pulse is 100, probably in consequence of the anodyne, but he has no headach or thirst. The eruption has made little progress since yesterday.

Contin. potus. Omitt. gargarisma. Rept. haust. anodyn h. s.

17th.—Passed a good night, and makes no complaint, unless from the smarting of the skin; his tongue is a little white, but moist; he has a good appetite, and his bowels are open; pulse 90 and full. Most of the pustules on the face have assumed an opaque amber colour, and quite a horny feel; on the other parts of the body they are still of a pustular appearance, but very large, and here and there coalescing.

Contin. potus. Repet. haust. anodyn. vespere.

18th.—Passed a good night, and makes no complaint. Many of the pustules on the limbs have discharged their contents without forming crusts; in others the matter seems to undergo a gradual inspissation and change of colour, so as to become like those on the face, horny scabs.

No medicine. Vespere repet. haust. anodyn. et descendat in baln. calid.

19th.—Most of the horny scabs came off in the bath last night, leaving fleshy looking tubercles on the skin; the other pustules have discharged their contents, leaving the thin cuticle as a loose bag behind them.

Adeat baln. calid. Omitt. anodyn.

20th.—Bowels are costive, and he passed rather a sleepless night, but in other respects he has no complaint. No alteration since yesterday in the appearance of the eruption.

Sumat olei ricini ℥j. Repet. anodyn. h. s.

From this period this man gradually recovered, and he now, August 10th, exhibits numerous pits of the recent disease, which are very easily distinguishable from those left by his original variolous attack.

Case V.—Had I entertained the most remote idea of the interest which the following case would have excited, it should have been kept with the most scrupulous minuteness. But neither Dr Thomson, who is in the constant habit of seeing my family, nor myself, considered it as any thing else than a severe case of chicken-pox, and some other medical gentlemen who saw the boy, were of the same opinion. I can undertake, however, to assert with perfect confidence, that the general outline, and the more minute particulars as far as they go, are perfectly correct; for although the facts were not noted day by day at the bedside, they have been taken while the impressions were yet recent in the recollection of a fond mother, accustomed to the diseases of children, assisted by the memoranda made by myself, and compared with the observations of others. The original account was at Dr Monro's request, transmitted to him, on the 18th of June, only nine days after the first attack of the disease, and I shall transcribe the very words in which it was conveyed to him.

My Dear Sir,—I am sorry that I was from home, on public duty, on Sunday last, when you and Mr Bryce called at my house. I only returned from Northumberland last night, and I lose no time in giving you the particulars of my son's case.

On Tuesday the 9th instant, he returned from school about four o'clock in the afternoon, complaining of an intense headach and pain in his right side. His pulse was nearly 100, hard and bounding; his skin hot, dry, and rough to the touch, and somewhat inclined to redness; his eyes suffused, and his cheeks very much flushed; his tongue was moist, and rather redder than usual, particularly in the centre; the pain of his right side was considerably increased by pressure, but I was not sensible of any enlargement of the liver, and at first attributed his complaint to a blow on that part by some of his school-fellows of his own age, (about eleven,) particularly as there were marks of tears on his cheeks. I found on examination, how-

ever, that this was not the case, but that he had been seized at the grammar school in the morning, with intense headach, and had been so unwell at the writing class as to be unable to continue his business. On further examination, I found, that, in the morning before he went to school, although the weather was unusually warm, he had complained of cold and sleepiness, and did not eat his breakfast. This was in some degree attributed to his having walked out the evening before to Duddingston, to visit the family of a friend, and not having returned before dark.

When I saw him at four o'clock in the state above described, I did not particularly recollect that his younger brother, a boy of about eight years old, had had a very slight eruptive complaint, preceded by a degree of fever scarcely perceptible. The eruption consisted of a few detached papulæ, one only of which became vesicular; it was considered as varicella, a complaint under which the child of the nurse in the hospital close to my house, had laboured a few days before, which it was supposed he had caught from a soldier who had been in the hospital under that complaint some time previous, and with which another soldier then in the hospital was supposed to be affected. The disease of this last person has, however, since been ascertained to be small-pox, occurring a second time, as there is every reason to suppose, both from the report of the man, and from the marks of that disease, which are very apparent on his face, breast and back.

My son, immediately on his arrival from school on Tuesday, was bathed in tepid water and put to bed, and I administered to him a bolus containing four grains of calomel, which before night produced several copious stools, consisting of highly offensive bilious matter. He passed, however, a most distressing night, being watchful and delirious. On Wednesday his skin still continuing extremely hot, he was occasionally sponged with vinegar and cold water. He was plentifully supplied with lemonade and orange juice, and in the evening his calomel bolus was repeated. That night he never slept, and was highly delirious, insomuch that I was about to put leeches to his temples, when, on Thursday morning, I perceived a papular eruption beginning to appear upon his feet and around his ankle-joints; it then began to appear about his wrists and fingers, and in circular clusters on the inside of his thighs, (the clusters about the size of a half-crown piece,) and then spread to his face, and soon almost covered it, particularly affecting his eyelids. As the eruption spread, his skin, which had continued excessively hot, grew cooler and more soft, and the pain of his head, which had been most urgent, began to abate; its heat, which had been intense, moderated, and he became perfectly collected. Before Thursday evening some of the papulae became distinctly vesicular, the vesicles being full, hemispherical, without any depression, and containing a watery fluid. They were pretty thickly spread over his face, hands, legs, and thighs, and there were a few on his body, but none upon his breast. His principal complaint, on Thursday night, was intense itching, and he was

very restless and somewhat delirious that night; from this day to the present date he was seen by Dr Thomson. On Friday morning I found his skin much cooler; his tongue clean, but still rather more red than natural, and the vesicles prominent and full of watery fluid; the intervals occupied with the red papular eruption. His bowels being costive, he had ʒij. of Epsom salts, which purged him freely. On Saturday all the appearances were the same, and on this day I took six charges of limpid fluid from the pustules, for the purposes of experiment. On Sunday there was little change, except that the fluid in the pustules became thick and yellow. This day he was seen by Dr Duncan junior. Towards evening the pustules began to dry up in many places, and the papular eruption to scale off, giving an appearance to the skin as if it had been sprinkled with reddish half dried jelly. On Monday he was seen by yourself and Mr Bryce. On my return home last night, (the seventeenth) or the ninth night of his illness, I found him better in every respect,—no fever, and nothing but the marks of the eruption remaining. I should have mentioned that a ptyalism came on on Thursday, and that a pustule formed on the inner part of the globe of his right eye, and a few very small ones on the margin of the lids; all these have now disappeared.

This boy was vaccinated by myself when three months old, and I had every reason to be satisfied with the genuineness of the matter. He has often since been exposed to variolous contagion in Spain, France, and Portugal, and particularly last year at Portsmouth. The nature of his disease and its name I shall not presume to offer any opinion upon. The treatment consisted of the two calomel purges and the solution of Epsom salts above mentioned; of cooling acidulous drinks; and of frequent sponging with vinegar and cold water, the tepid bath having been premised on the first attack; his room was kept as cool as possible, and his bedding consisted of a single sheet and light coverlet.

I shall be most happy to give you any further information upon the subject, either as it may refer to my son, or to the results of the experiments with the lymph taken from him. Believe me, my dear Sir, very truly yours,

J. Hennen,
Deputy Inspector of Hospitals.

Queensberry House,
June 18, 1818.

Within two hours after the lymph was taken from my son, it was inserted into the arms of the six children who form the subjects of the following cases, from six to eleven inclusive. They were all in perfect health, and never had either cow-pox or small-pox.

Case VI.—Rosana O'Neil, aged 9 months, 13th June, was inoculated in two places on the arm.

June 17th, (5th day of the inoculation.)—A small papula had appeared on each of the punctures; it was of a hemispherical shape, rather acuminated, and had an inflamed base.

June 18th, (6th day of inoculation.)—The papulae were increased in size; their bases were more inflamed, and minute pearly-coloured vesicles had appeared on their apices.

June 19th, (7th day of inoculation.)—The vesicles were larger; their centres were depressed, and of a brownish hue, while the margins were of a pearly colour, turgid, and overlapping the bases, which should now be more properly named areolae; they were, in short, very similar to vaccine vesicles, but instead of being exactly circular, they had angular projections from their circumference.

June 20th, (8th day of inoculation.)—The vesicles have increased in circumference, but not in elevation, being, on the contrary, flatter than yesterday; they retain their pearly colour, and the areolae are but little increased.

The child is somewhat fretful, but quite free from fever.

June 21st, (9th day of inoculation.)—The vesicles retain the appearance and size they had yesterday. The areolae are narrower, and of a duller red colour. On puncturing one of the vesicles, clear lymph exuded, but in small quantity, until different punctures were made, when fresh lymph issued, denoting the cellular structure of the vesicle. The child is still fretful, but cool.

June 22d, (10th day of inoculation.)—The vesicles are increased in size, but unaltered in shape and colour; the areolae are wider, and of a more florid red. The child was more fretful throughout yesterday, had some vomiting towards evening, and was hot and uneasy during the night; to-day she is cooler, but still somewhat feverish. In the course of yesterday, two or three minute points appeared in the areolae, and on the child's getting up this morning, several others were observed on the body. This eruption consists of minute vesicles, which are of a pearly colour, have depressed centres, and are raised on slightly elevated inflamed bases; the vesicles are in number three on the face, two on the chest, and two on each thigh.

June 23d, (11th day of inoculation, 2d of eruption.)—The original vesicles on the arm are not altered in appearance, but their areolae are increased in width.

She had occasional vomiting through the course of yesterday, and was hot and fretful. More vesicles, possessing the same characters as those mentioned yesterday, have appeared on the face, trunk of the body, and in the areolae; they are in number upwards of forty.

June 24th, (12th day of inoculation, 3d of eruption.)—The original vesicles on the arm have lost their pearly colour, and become of a more chalky white, but are not in any other respect altered. The child was hot, and fretful towards the evening, and is rather more so this morning than yesterday at the same hour. More vesicles of the same character have appeared on different parts of the body, particularly on the face, where they are now confluent.

June 25th, (13th day of inoculation, 4th of eruption.)—The original vesicles on the arm are flatter, are more of a greyish hue, and have coalesced with several of the small vesicles which are in the areolae. The child is quite cool, and takes its food pleasantly. More of the eruption has appeared. The vesicles which first came out are larger, but retain the pearly colour and depressed centres, which the more recent ones possess.

June 26th, (14th day of inoculation, 5th of eruption.)—The brownish depressed centres of the original vesicles on the arm are gradually extending themselves towards the circumference of the vesicles, and the areolae are becoming of a less vivid red. The skin is rather hotter than natural, but the child is not fretful. Several new vesicles have appeared on the extremities, which are of a pearly colour, while those that first appeared have acquired a yellowish hue, and throw out a thick purulent-looking fluid when punctured.

June 27th, (15th day of inoculation, 6th of eruption.)—The brown coloured centres of the vesicles on the arm have now almost extended themselves to the circumference of the vesicles, and are quite horny and semi-transparent; the areolae are narrower, and of a brownish-yellow colour. The child is somewhat hotter, and more fretful than she was yesterday, and several new vesicles have appeared since last night.

On the face, part of the eruption, which was pustular yesterday, has now dried into semi-transparent amber-coloured crusts, which seem to be raised on indurated bases, and are of the size and shape of the pustules themselves. In this progress of drying, there does not appear to be any rupture of the pustules, but a gradual inspissation and change of colour of their contents. On the trunk, a considerable share of the eruption, partly in a pustular, and partly in a vesicular state, has followed the course of that on the face; but many on the trunk, and more particularly on the extremities, have not yet begun to dry up.

June 28th, (16th day of inoculation, 7th of eruption.)—The crusts on the arm are exactly like those of the vaccine disease, and the areolae are almost gone.

The child is in perfect health and in good spirits. No fresh vesicles have appeared, and, with the exception of a few pustules on the hands and feet, the eruption, partly in a vesicular, partly in a pustular state, has followed the same course of disappearance as was mentioned yesterday.

June 29th, (17th day of inoculation, 8th of eruption.)—The whole of the eruption has now dried up.

June 30th, (18th day of inoculation, 9th of eruption.)—A few crusts have come off the face, leaving behind them fleshy tubercles.

July 8th.—Most of the crusts have come off, leaving generally tubercles, which are soon absorbed, but in one or two places pits.

There were in the room with this child, the father, mother, and sister; the two former had had variola, the latter had been vaccinated. None

of them took any disease. One adult who often nursed the child, took ill, (Case No. 13, Delany.) He had had variola.

Case VII.—Thomas Hogg, aged five months, June 13th, was inoculated in two places on the arm.

June 17th, (5th day of inoculation.)—A small papula had appeared on each of the punctures. The papulae were hemispherical in shape, and raised on inflamed bases.

June 18th, (6th day of inoculation.)—The papulae were increased in size, and minute pearly-coloured vesicles had appeared on their apices; the centres of the vesicles were depressed, and of a brown colour.

June 19th, (7th day of inoculation.)—The vesicles were broader, but flatter, they contained more evidently a fluid, and retained their pearly colour; the centres were still depressed, and their bases were thicker and harder. Areolae like those of the vaccine vesicle on the tenth day had appeared around each.

June 20th, (8th day of inoculation.)—The vesicles were not altered in appearance, but the areolae were wider, and of a more florid red. The child was hot and fretful.

June 21st, (9th day of inoculation.)—The vesicles were increased in size, and were more depressed in their centres; they retained their pearly colour, and, on being punctured, threw out a clear lymph, which (like that of the vaccine vesicle) was contained in separate cells. The child has remained hot and fretful. No eruption has come out over the body, but the areolae (now very large) are studded with minute pearly-coloured vesicles with depressed centres.

June 22d, (10th day of inoculation, 2d of eruption.)—The original vesicles are not altered since yesterday, but the areolae are larger more irregularly circumscribed, and of a rosy red. The child continued to be hot and feverish throughout yesterday. In the evening the febrile symptoms were considerable, and vomiting came on. After this exertion, three or four red points appeared on the breast, which, in the course of the night, have been followed by five or six on the extremities, a like number on the neck, and many in the areolæ. This eruption consists of pearly-coloured vesicles, with depressed centres, which are raised on inflamed bases. *

June 23d, (11th day of inoculation, 3d of eruption.)—The original vesicles are larger, but flatter; they still retain their pearly-colour, and have coalesced with several of the minute vesicles which are in the areolae The skin was burning hot during the night, and there was occasional vomiting; to day these symptoms have almos gone off, but he moans and cries a good deal. More of the eruption has appeared on the body; the vesicles that had come out yesterday are larger, but not otherwise altered in character.

June 24th, (12th day of inoculation, 4th of eruption.)—The original vesicles have quite lost the turgescence around their circumfer-

* In this and all the other cases, wherever the skin was inflamed, from whatever cause, there the eruption first appeared.

ence, and have, in coalescing with the smaller vesicles of the areolæ, formed a pearly crust, which has a stellated appearance.

The child is cooler and less fretful. Much more of the eruption has appeared, particularly on the face, where the vesicles are now confluent. The vesicles which first appeared are large, hemispherical, and semi-transparent, while the more recent ones are depressed in their centres, smaller, and of a pearly hue. The bases of all of them are a little indurated, red, and almost regularly circumscribed.

June 25th, (13th day of inoculation, 5th of eruption.)—The vesicles on the arm are now more completely dried into crusts, which are of a chalky white. The child is quite cool and in good spirits. More of the eruption has appeared, particularly on the extremities. The vesicles which first appeared are larger, and more of a straw colour; the others are in different states of progression.

June 26th, (14th day of inoculation, 6th of eruption.)—The crust on the arm becomes thicker, and there exudes a little purulent matter from under it. The child is free from fever. Some few more vesicles have appeared. The greatest part of the eruption on the face and trunk is now evidently pustular; that on the extremities is yet chiefly vesicular. The pustules have a brown mark in the site of the depressed centres. The whole face, more particularly the eyelids, are much swollen, and there is a degree of ptyalism.

June 27th, (15th day of inoculation, 7th of eruption.)—The crusts on the arm have acquired a brownish tinge; the brown specks in the centres of the pustules are increasing towards the circumference, but do not form complete crusts as yet on the body generally: in the areolæ, however, that process is completed, the vesicles in them having perfectly dried into semi-transparent, polished, amber-coloured, hemispherical crusts.

June 28th, (16th day of inoculation, 8th of eruption.)—The crusts of the original vesicles are now completely of a horny consistence, and brown colour; the areolæ have disappeared; the child is perfectly cool and in good spirits; no fresh eruption has appeared. The greatest part of the pustules on the face and trunk have dried into brown, semi-transparent horny crusts, and the whole of the eruption which remains is now pustular, nowhere vesicular. The swelling of the face is less. Ptyalism still profuse.

June 29th, (17th day of inoculation, 9th of eruption.)—The child is cool and in good spirits; the swelling of the face and ptyalism are almost gone, and, with the exception of a few pustules on the extremities, the eruption has dried up into the polished crusts already described.

June 30th, (18th day of inoculation, 10th of eruption.)—The remaining pustules have all dried up.

July 3d.—Many of the crusts have come off, leaving small brownish fleshy tubercles behind them.

July 8th.—One of the crusts has separated from the inoculated part, leaving a considerable depression.

July 13th.—All the crusts have separated: the tubercles seem gradually to be absorbed; but brownish coloured maculae, in some places slightly depressed, mark where the eruption has been.

There were in the room with this child and Conolly, No. 9, the two fathers and mothers, two other men, their wives and three children. All the adults had had variola; one of them took a very mild disease, the other escaped. One of the children (a sister of Hogg's) was vaccinated; she escaped all disease. The other two children had never had variola, or the vaccine disease; both were affected, one very severely, the other, an infant of three weeks old, mildly.

Case VIII.—James Hughes, aged one year and ten months, June 13th, was inoculated in two places on the arm.

June 17th, (5th day of inoculation.)—A small acuminated papula, with an inflamed base, had appeared at the upper puncture; the mark of the lower one had disappeared.

June 18th, (6th day of inoculation.)—The papula is larger than yesterday, but is small when compared with those on the arms of the other children, who were inoculated at the same time; it is also more conical, and wants that pearly vesicle on its top, which they now possess.

June 19th, (7th day of inoculation.)—The papula is still more pointed, and its base is much more inflamed than those of the other children. A very minute vesicle can now be seen on its apex.

June 20th, (8th day of inoculation.)—The vesicle is larger, its centre is depressed, and it has a pearly colour; the base is thicker and harder than in the cases of the other children, and it is surrounded by an irregular areola nearly half an inch broad.

June 21st, (9th day of inoculation.)—The depressed centre of the vesicle is raised; the vesicle itself should now be more properly called a pustule, its colour being a bright yellow; the areola is larger, and of a deeper red.

June 22d, (10th day of inoculation.)—The pustule has been rubbed, and a purulent-looking matter has been discharged from it; the areola is of a still more deep or livid red.

The child has been very hot and fretful during the night, and continues so to-day.

A few vesicles can be seen on the face, and one or two on the arms; they are raised on inflamed bases.

June 23d, (11th day of inoculation, 2d of eruption.)—A brownish irregular scab has formed on the arm; the areola is contracted in size, and of a paler red colour.

The child was not so restless during last night, as he was the night before; he is quite cool and free from fever this morning.

The vesicles which were visible yesterday are no longer so, but their bases can be seen, and their hardness and elevation felt by drawing the finger over them.

June 24th, (12th day of inoculation, 3d of eruption.)—There is no alteration in the appearance of the inoculated part, unless that the areola is rather of a brighter red.

The child has been hot and fretful during the night.

The vesicles are again visible on the face, occupying their original seat on the inflamed bases mentioned yesterday. Some fresh ones have appeared on the back and breast, and two or three in the areola; they are of a pearly colour, have elevated red bases, and depressed centres.

June 25th, (13th day of inoculation, 4th of eruption.)—The crust on the arm has been almost rubbed off, and a little purulent-looking matter is discharged from under it; the areola remains as yesterday.

The child is still a little feverish. The vesicles generally are larger, but still of a pearly colour; their centres are yet depressed.

June 26th, (14th day of inoculation, 5th of eruption.)—The appearance of the arm is not altered. The child is still peevish, and has some degree of fever. Fresh vesicles appear daily, more particularly about the scrotum, and upper part of the right thigh, where there is some redness of the skin, the remains of an herpetic eruption. The vesicles which first appeared on the face, are now of the size of small peas, almost globular, and of an opaque yellowish colour. On the other parts of the body, they retain their pearly hue and depressed centres.

June 27th, (15th day of inoculation, 6th of eruption.)—No alteration in the appearance of the inoculated part. There is still a little fever. Fresh vesicles have appeared on different parts of the body, more particularly on the scrotum and extremities. The eruption on the face and in the areola is now to be called pustular; on the other parts of the body it is still vesicular.

June 28th, (16th day of inoculation, 7th of eruption.)—The arm is still unaltered. The febrile symptoms are milder, but not altogether gone.

More of the eruption has appeared on the trunk of the body. It is now chiefly pustular, even the last which has appeared.

June 29th, (17th day of inoculation, 8th of eruption.)—The areola has almost faded. The fever is almost gone. The pustules in the areola have dried into brown, semi-transparent, polished conical crusts; and on the face, the process of drying is commencing, as detailed in the cases of O'Neil and Hogg.

June 30th, (18th day of inoculation, 9th of eruption.)—The child is free from fever. The greater part of the eruption has dried into polished brown crusts, without any rupture or exudation; some few pustules, however, are but yet commencing that process, and a still smaller number have as yet shewed no symptoms of it. Of those that have dried, the greatest part were pustules, but some few were vesicular.

July 1st, (19th day of inoculation, 10th of eruption.)—The whole of the eruption may now be said to be in a state of crusts.

July 5th.—Some few of the crusts have come off, leaving small tubercles behind them, of a brownish, somewhat purple colour.

July 8th.—There is a depression in the inoculated part, but not in any other part of the body

July 13th.—Purplish blains mark where the eruption has been, but no where are pits visible.

There were in the room with Hughes, the father, mother, and five men, all of whom had had variola. One of them only, (Redmond Case 12,) became affected.

CASE IX.—PATRICK CONOLLY, aged three months. This child was in the same room with Hogg, No. 7. 13th June.—Was inoculated in two places on the arm.

June 17th, (5th day of inoculation.)—At the upper puncture a papula has arisen, which has an inflamed base; while at the under puncture there are two papulæ of the same description, joined by their bases to each other.

June 18th, (6th day of inoculation.)—A pearly-coloured film has appeared on the summit of each of the papulæ. It no doubt contains a very minute quantity of fluid, and is in reality a small vesicle.

June 19th, (7th day of inoculation.) The vesicles are now more distinctly formed; their centres are depressed, and of a dark colour; the papulæ, upon which they appeared, (or now more properly speaking their bases,) are broader, and surrounded by areolæ.

June 20th, (8th day of inoculation.)—The vesicles are larger, but retain their pearly colour, as well as the depressions in their centres; the bases and areolæ are larger. The child is somewhat fretful, but cool.

June 21st, (9th day of inoculation.)—The vesicles are larger than those on the arms of the other children, Hogg excepted; the areolæ are wider and of a more fiery red. The child is very fretful, but still cool.

June 22d, (10th day of inoculation.)—The vesicles on the arm retain their colour and the depression of their centres, but they are flatter, and not so turgid with fluid as they were yesterday; the areolæ are much increased in size, and are of a more florid red.

The child was very hot and fretful throughout the night, and remains so to-day. An eruption is now perceptible. It consists partly of vesicles, partly of papulæ. The vesicles are small, raised on inflamed bases, have depressions in their centres, and are confined to the areolæ. The papulæ are very minute, of a red colour, only two or three in number, and confined to the arms.

June 23d, (11th day of inoculation, 2d of eruption.)—The vesicles on the inoculated parts are broader but flatter; the areolæ are wider. The child was very hot and restless during the night, but is rather cooler to-day.

A few more vesicles have appeared in the areolæ, and some more papulæ, like those on the arms, have come out on the nates and

thighs; the papulæ on the arm are larger, and more distinct both to sight and touch.

June 24th, (12th day of inoculation, 3d of eruption.)—The original vesicles on the arm remain of the same size and colour, but their areolæ are now of a brownish tinge.

There has been little or no fever since yesterday. More of the papulæ have appeared generally over the body, but more particularly on the face.

The papulæ which first appeared have now minute pearly vesicles on their summits. The vesicles have depressed centres.

June 25th, (13th day of inoculation, 4th of eruption.)—The appearance of the inoculated part is not altered.

The child is a little fretful, but not hotter than natural.

More of the eruption appears daily; it is, however, not papular, but vesicular from the period that it becomes perceptible. All the papulæ are now converted into vesicles, and all the vesicles are depressed in their centres, and of a pearly colour.

June 26th, (14th day of inoculation, 5th of eruption.)—The inoculated part is not altered in appearance.

The child is free from fever. More of the eruption has appeared, particularly on the face. Most of the vesicles have lost their pearly look, and have become more opaque, and of a straw colour. In the areolæ they are distinctly pustular, and several of them have coalesced with the original vesicles.

June 27th, (15th day of inoculation, 6th of eruption.)—The vesicles on the arm have dried into brownish scales. The child continues free from fever. The eruption on the face is now to be called pustular; on the body it is scarcely so; while in the areolæ the pustules are undergoing a gradual change of colour towards brown. Some fresh vesicles have appeared during last night.

June 28th, (16th day of inoculation, 7th of eruption.)—There has been no rupture of, nor exudation from the vesicles on the inoculated part, in their process of drying up.

The child is fretful, but its skin is quite cool. A few fresh vesicles appeared on the back during the night. The eruption over the body is now to be called pustular. Most of the pustules on the face, and a few on the body, have acquired a brown mark in the centres, which seems gradually to extend itself to their circumference. The eruption now gives a rough horny feel to the finger drawn over the skin.

June 29th, (17th day of inoculation, 8th of eruption.)—The child is still a little fretful, but not hot. The eruption has nearly *in toto* dried up into polished, semi-transparent crusts, of an amber colour. These crusts are of the same form and size with the pustules, and are firmly fixed on elevated hard bases. As the crusts have formed, the redness of the bases has gone off.

June 30th, (18th day of inoculation, 9th of eruption.)—Most of

the remaining pustules have now gone through the same process of incrustation.

July 1st, (18th day of inoculation, 10th of eruption.)—The whole of the eruption has dried up.

July 8th.—Many of the crusts have separated, leaving brown shining maculæ, rather elevated than depressed.

July 13th.—Maculæ are still evident, but unless at the inoculated parts there are no evident depressions.

CASE X.—CHRISTIAN REYNOLDS, aged ten months. June 13th.—Was inoculated in two places on the arm.

June 17th, (5th day of inoculation.)—A papula is now distinctly perceptible at the lower puncture. It is smaller than those on the arms of the other children, and has no inflammation of base. The mark of the upper puncture has gradually disappeared.

June 18th, (6th day of inoculation.)—The papula is less acuminated than it was yesterday, and altogether looks as if it were to go back.

June 19th, (7th day of inoculation.)—The papula is very small, when compared to those of the other children, but it is more regularly circular than any of them. A pearly film can now be seen on its apex, and it will, with greater propriety, be termed a vesicle in future.

June 20th, (8th day of inoculation.)—The vesicle is now more distinct, and shews an evident depression in its centre. Its base (or in other words the original papula) is larger than yesterday, but is less in size, and much less inflamed than those on the arms of the other children.

June 21st, (9th day of inoculation.)—The vesicle is more distinct than yesterday, and still of a pearly colour; it is not so broad, nor flat as those of the other children, but is more circular and cup-shaped than any of them.

June 22d, (10th day of inoculation.)—The vesicle is more distended with fluid, so that its circumference is quite turgid, and overlaps the base, as in the case of the true vaccine vesicle; an areola has appeared around its base.

June 23d, (11th day of inoculation.)—With the exception of the areola being larger, and more of a florid red, the appearance of the inoculated part is not altered.

The child was hot and fretful throughout the night; she also vomited frequently; to-day she is hot; and her pulse is quick.

Several small vesicles, raised on inflamed bases, and having depressions in their centres, can this morning be seen in the areola, but nowhere else on the body.

June 24th, (12th day of inoculation, 2d of eruption.)—The vesicle on the inoculated part is not altered in appearance, the areola, however, has faded much, and in many places is nearly altogether gone. The child is still rather fretful, but cooler. The number of

vesicles in the areola is not increased, nor are the vesicles themselves altered in character. Some few vesicles of the same appearance have come out on the back, arms, and face.

June 25th, (13th day of inoculation, 3d of eruption.)—The areola is rather brighter again ; in other respects the inoculated part is not altered. The child is free from fever, and in good spirits. Much more of the eruption appeared yesterday, particularly on the forehead. It retains the characters already given.

June 26th, (14th day of inoculation, 4th of eruption.)—The film of cuticle forming the vesicle on the inoculated part has a dried feel, and has changed its colour to a lightish brown ; the areola is as large as ever. The child continues to be free from fever. Much more of the eruption has appeared on the trunk and face, but it is nowhere confluent ; it every where, as yet, retains its vesicular character.

June 27th, (15th day of inoculation, 5th of eruption.)—The original vesicle on the arm has now completely dried into an amber-coloured, polished crust, which retains the form that the vesicle possessed. The areola is irregularly increased in size, and the vesicles in it have become of a lightish brown colour, and feel horny to the finger drawn over them. The eruption has on the forehead acquired a degree of opacity and yellow colour, which on the other parts of the body it is destitute of. It appears also that the depressed centres go off, on this change of colour taking place. Fresh patches of eruption continue to appear, particularly on the extremities.

June 28th, (16th day of inoculation, 6th of eruption.)—The crust has been rubbed off the arm, leaving a depression from which a little matter oozes ; the areola has become of a brownish hue. The child continues free from fever. The eruption, partly in a state of vesicles, partly in a state of pustules, has acquired a brownish tinge, and feels rough and horny to the finger drawn over the skin ; the bases on which the vesicles and pustules were raised have lost their inflamed appearance, and seem more firm and indurated.

June 29th, (17th day of inoculation, 7th of eruption.)—The eruption may be said to have completely dried up into polished, semi-transparent, amber-coloured conical crusts.

July 3d.—A very few of the crusts have separated, leaving brownish maculæ, but no evident depressions.

July 8th.—There is a depression at the inoculated part, but nowhere else on the body.

July 13th.—The brown maculæ are yet very distinct.

The father, mother, fourteen men, and one woman, were in the room with this child ; all had had variola ; none took any disease.

Case II.—Mary Ann M'Dermott, aged three months.—June 13th.—Was inoculated in two places on the arm.

June 17th, (5th day of inoculation).—The mark of the upper punc-

ture has gradually disappeared; at the lower part, where two punctures had accidentally been made, there are now two distinct papulæ.

June 18th, (6th day of inoculation.)—The bases of the papulæ are more inflamed than those of the other children, and a pearly film has appeared on the apex of each of them.

June 19th, (7th day of inoculation.)—The pearly films are now well formed vesicles; the vesicles are flat, and broad, with depressed centres; bases are not quite so much inflamed.

June 20th, (8th day of inoculation.)—The circumference of the vesicles is still of a pearly colour, and more turgid than yesterday; their centres are still depressed, but have acquired a brown colour; their bases are not so much inflamed to-day as in the cases of Hogg and Conolly.

June 21st, (9th day of inoculation.)—The vesicles are broader, their circumference is not so turgid, and they are more cup-shaped than yesterday; their bases, also, are of a less florid red colour.

June 22d, (10th day of inoculation.)—The vesicles are not altered in appearance, but an areola has formed around them. Though the other children have been all more or less feverish, this girl remains in perfect health, which may in some measure be ascribed to her having been almost constantly kept in the open air.

June 23d, (11th day of inoculation.)—The inoculated part is little, if at all, altered in appearance.

The child is fretful, and does not take its food so well, but it is not hot, or feverish.

Many minute vesicles of a pearly colour have appeared in the areola; there is also one of the same appearance on the right hip, but none on any other part of the body. These vesicles have depressed centres, and are mounted on inflamed bases.

June 24th, (12th day of inoculation, 2d of eruption.)—The original vesicles on the arm have coalesced with each other, and with several of the more recent ones in the areola. The child was in the open air throughout the whole of yesterday. She is a little fretful to-day, but her skin is perfectly cool.

One other vesicle only has appeared; it is on the back, and has the same character with the others.

June 25th, (13th day of inoculation, 3d of eruption.)—The appearance of the arm is little altered, with the exception of the areola, which is of a less fiery red. The child was kept throughout the whole of yesterday in the open air. She is perfectly free from fever; no fresh eruption has occurred; the vesicles which were noted yesterday and the day before are larger, but not otherwise altered in appearance.

June 26th, (14th day of inoculation, 4th of eruption.)—With the exception of the areola, which continues to fade, there is no alteration in the inoculated part. The child is in good spirits. No fresh eruption has appeared. The vesicles retain their pearly colour, and depression of centre.

June 27th, (15th day of inoculation, 5th of eruption.)—The original vesicles have dried into brown crusts; the areola has become of a

purplish brown colour, and its circumference is now very irregularly defined. The child continues in good spirits, and perfectly free from fever. The vesicles in the areola, and the two on the nates and back, have dried into polished brown crusts.

June 28th, (16th day of inoculation, 6th of eruption.)—The inflamed bases of the vesicles have disappeared. The crusts are yet firmly fixed.

June 30th —The crusts have come off from the back and nates, leaving fleshy purple-coloured tubercles.

July 5th.—Tubercles absorbed, but brownish maculæ remain.

July 14th.—There is a deep depression at the inoculated part, but no where else.

The father, mother, and six men were in the room with this child; all had had variola. One adult (Dean No. 14.) took the disease.

The succeeding cases shew the progress of disease in adults, three of whom had, and one had not had small-pox previously.

Case XII.—John Redmond, aged 21. July 7th. Complains of pains in the abdomen, and about his loins, with headach, heat of skin, and thirst. Two days ago he bathed in the sea, when he was seized with cramps, and was taken out of the water nearly in a state of insensibility.

Sumat pulv. doveri, gr. x. ter die.

8th.—The pains of abdomen and loins continue. He also complains of pain of his chest; pulse full, and about 90.

Mittr. sanguis ad ℥xxx.

9th.—This morning an eruption of small spots, many of which are vesicular, and resemble the variolous eruption, has appeared generally over the body, but more particularly on the face. Says his head is light, and that he has much thirst: pulse 90; tongue white; belly open.

This patient has been living in the same barrack-room with the child Hughes, (No. 8.) who was inoculated from Master Malcolm Hennen, under the conviction that his disease was varicella; but of the real nature of which, there has since arisen much occasion of doubt; and there still exists a difference of opinion, whether it ought to have been considered a case of small-pox, modified by previous vaccine disease, or a case of varicella. The patient has a number of cicatrices on the breast and other parts of the body, resembling those left by small-pox. He says, that they were produced by that disease, which he contracted when about seven years old from three children who were his playmates, and who had the variolous disease by inoculation. He also says, that about five years after that period he lived in the same house with three children during the whole time they laboured under variola from inoculation, and that his intercourse with them was unrestricted.

Bibat pro potu commune solut. supertart. potassæ.

10th.—The eruption has become more numerous, and the vesicles in general are fully formed. Temperature of the skin moderate, with moisture.

Continr. potus.

11th.—Eruption is still vesicular; fresh specks, which almost from

the first contain lymph, appear to come out; but in order to determine this with more certainty, several small spaces in the body have been encompassed with a black line, and the number of vesicles in them counted.

Continr. potus.

12th.—The vesicles have become larger; they are in general of a flat shape, with depression in the middle; their contents are transparent lymph. In some places they have become confluent. There is some redness of the eyes, with stiffness and swelling of the eyelids.

Continr. u. a.

13th.—The face and eyelids are much swelled; some ptyalism; belly open, much thirst, pulse moderate.

Continr. potus.

14th.—On the forehead and face the pustules are acquiring a yellowish crust, and on the body and extremities a few of them have a bluish hue, and appear as if a crust were beginning to be formed in the depression in the middle of the pustules. There is much swelling of the face, and the eyelids are closed; ptyalism is very profuse; pulse full and about 80; heat of skin considerably higher than natural, and communicates a pungent sensation to the hand; no stool since last night.

Lavetur corpus aq. frigidâ. Sumat. nat. vit. ℥j in aquæ ℥vi solutam, partitis vicibus.

Vespere.—The hands begin to swell.

15th.—Salts operated freely. He has taken his breakfast with a good appetite; ptyalism and swelling of the face still considerable; but the eyelids are not closed as yesterday. A more distinct yellow crust has now formed over the face by exudation from the pustules on it; pulse about 90; temperature moderate. On the whole, the symptoms are very remarkably diminished in violence since last visit.

On this day 10 lancets were charged with the matter by Mr Hennen; the matter in some part of the eruption was found to be purulent, in others to be pure lymph.

Vespere.—Temperature in the axilla 102; much general uneasiness.

Lavetur corpus aquâ frigidâ.

16th.—One of the hands more swelled this morning. Swelling of the face as before. Ptyalism less. The exudation continues on the face; but on the body, the pustules are much fuller, and seem distended to bursting, the depression in their centres being in consequence obliterated. The contained fluid is purulent. Pulse 106; heat 100. Made three attempts to go to stool in the night, but ineffectually. The redness, which had been around the bases of the pustules, is much less than it was, and the skin between still retains its natural colour.*

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* The report of this day, and of the 17th, 18th, 19th, and 20th, was made by me, in conjunction with Mr Johnston, and the other gentlemen already mentioned.

Repet. nat. vit. ℥i.

Vespere.—Says he feels much easier, and, as he expresses it, lighter. There is less swelling of the face than in the morning, and there has scarcely been any ptyalism through the day. The redness of the bases of the pustules evidently diminishes, and the interstitial skin is of its natural colour. Temperature in the axilla 99; pulse 100. Asks for animal food.

17th.—Passed a good night. His physic operated twice. Pulse 100; heat 97. He complains of hunger, and asks for animal food. The swelling of the face is completely gone down; that of the hand is nearly gone, and there appears none in the feet. There are few of the pustules on the face that are not crusted; those on the trunk and limbs have not yet formed crusts, but, in general, are of a more chalky hue than yesterday; a few however, are shining. The skin, in the spaces between the pustules, is nearly natural, (it never had been of a damask rose red.) Traces of inflammation still remain about the bases of the pustules. The matter, both in the chalky and shining pustules, is purulent, and the bottoms of both are of a florid red, as found on removing the skin which contains the matter. On inspecting minutely the pustules on the trunk and limbs, although they seem to differ in point of size and confluence, they all seem to keep pace in point of maturity. On the penis and scrotum the pustules have dried up into scabs of a blackish brown colour, while on the face the crust is yellowish. No fresh crops of eruption have appeared since the 11th, and what appeared then is not now to be distinguished from the first that came out. Some pustules, observed by Dr Duncan and Mr Hennen, on the tongue, which appeared on the 11th, are still visible; but some, observed by Mr Johnston on the palate, cannot now be examined on account of the soreness of his mouth. One pint of broth; two ounces of wine, diluted with water, through the day.

17th.—*Vespere.*—No change since morning. Is free from fever.

18th.—Is to-day much better in every respect. Pulse 80; heat in the axilla 99. Some thirst, but his tongue is moist. Bowels regular, having had a natural stool this morning. Swelling of the face entirely gone. All of the pustules on the face are now crusted, and also some at the roots of the hair. On the trunk and limbs the crusting has not commenced; but on these parts some of the pustules have burst, and are covered with shrivelled skin; others are also covered with shrivelled skin, but have not burst, and the matter seems to be absorbed. Some few minute pustules have come out since yesterday's visit, principally on the abdomen and lower extremities.* Still some swelling of the hands, and the feet more swelled than they appeared yesterday. The scabs on the penis and scrotum are as yesterday; and, on retract-

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* Sutton, Dimsdale, and the older inoculators notice the same. Dr Huxham mentions his having occasionally observed a second crop. See his Account of the Anomalous Small-pox at Plymouth in 1724.—Philosoph. Transact. Vol. XXXIII. p. 380.

ing the glans, about twelve pustules are observed. A bruise on his right leg, which he had received a day or two before he came into hospital, when he was bathing, is now crusted over, having had some pustules formed on it.

Vespere.—Continues free from fever, but complains of watchfulness.

Sumat extract. opii gr. iii.

19th.—Convalescence proceeds, pulse 80; heat 96; the crusts on the face are falling off; on the body also, and partially on the legs and arms, the pustules begin to disappear; the progress of disappearance is as follows:—The turgid shining pustule either bursts, and the contained fluid flows out, or it gradually sinks, and the coat of the vesicle becomes shrivelled from the absorption of the contained fluid: the papulæ that came out yesterday, have not increased in number, they are very minute, and many of them now contain a fluid like the larger pustules.

Vespere.—No alteration since morning; watchfulness continues.

20th.—Convalescent, pulse natural, heat 99; some of the crusts on the face have fallen off, leaving behind them small fleshy tubercles as their bases. On the body, the progress of disappearance goes on as described yesterday, and the parts from which the pustules have been removed either by bursting or by absorption, are of a brownish mahogany colour. On the arms some crusts are formed, similar to those on the face, in other places, the disappearance of the pustules goes on as in the body; where he had been bled, one of the pustules has left a deep but small ulceration; on the legs and thighs, the progress of disappearance is more slow, some very few of the pustules have assumed the appearance of bullæ, and some of them, particularly on the feet, have acquired a more firm and solid appearance, probably from the inspissation of the contained fluid; on the soles of his feet and palms of his hands, where the cuticle is hard, the pustules have not burst nor formed crusts, and they appear beneath the transparent cuticle, shining through it as it were, of a dark brown colour.

This man has never complained of cough during the whole of his disease, his urine has not been bloody at any period of the complaint. The few secondary papulæ which appeared on the 18th have made no progress.

Baln. tepid.

21st.—Did not sleep last night owing to his not having taken his opium; many of the crusts have fallen off from the face, but there does not appear to be any pits formed in the skin. The greater number of the pustules in the trunk of the body are dried up, and the cuticle of each formed into a firm brown crust; some of the pustules still contain a purulent fluid in the thighs and arms, but they are very flaccid from the absorption of their contents; has a good appetite, functions natural.

Repet. opii gr. iij.

22d.—Slept well, and feels in good health this morning; a few pus-

tules only remain on the feet and hands; in every other part they are dried up.

23d.—Has a phlegmon on the right arm.

Cataplasm. emoll.

26th.—Gains strength daily.

28th.—Continues to recover strength; appetite good, functions natural. There is a small phlegmon on the right leg, similar to that on his arm.

App. cataplasm.

29th.—Phlegmon opened; crusts continue to fall off; is perfectly well, but complains that he does not sleep.

Cont. cataplasm. Adeat baln. calid.

31st.—Convalescent.

No medicine.

August 11th.—Discharged with several recent pits on his face and body, not to be distinguished from those of small-pox.

Case XIII.—John Delany, aged 20, July 12th, complains of headach, with pain of his back and limbs and much lassitude; pulse frequent, skin rather hot, much thirst, belly costive. He awoke with the above complaints last night, and ascribes them to his having caught a cold on the 6th, when he got wet and remained in his wet clothes.

Sumat pulv. antimon. gr. vi., calomel. gr. viij.

13th.—Physic operated well, and before bed-time he felt much relieved from his headach. He did not sleep, and the headach, with general uneasiness, has increased this morning; much thirst, skin hot, pulse 100, has a slight cough.

Mitt. sanguis et sumat calomel. gr. viij. c. pulv. antimonial. gr. iv.

14th.—An eruption appeared about six o'clock this morning, most numerous on the face, and very thinly scattered over the trunk, arms, and limbs. Each speck consists of a minute vesicle on an inflamed base, which feels hard under the finger. The headach and febrile heat are much relieved.

This patient has a number of cicatrices, like those left by small-pox, over the trunk and limbs, but none on the face; says he had small-pox when a child, and was always told these were the marks left by them.

He used to nurse and amuse Serjeant-Major O'Neil's child, (No. 6.) when labouring under the eruption arising from inoculation of a disease, the nature of which is at present doubtful.

No medicine.

15th.—Temperature and pulse moderate, belly open.

Vespere.—Has considerable general uneasiness; heat about 99°.

16th.—Passed the night without sleep, is at present almost free from fever, tongue white, pulse 80, temperature 97°. The vesicles are increased in magnitude, and in the greater number the shape is globular; in a very few the central depression appears; on the forehead, nose,

and cheeks, the vesicles have not each a separate inflamed base, but appear to be placed upon a common base, like herpetic vesicles. On these parts too they are confluent; on the body, limbs, and arms they are more distinct, and each has its separate circumscribed base.

17th.—Says he has some headach this morning; tongue white; no appetite; temperature and pulse nearly natural. Passed the night without sleep. The eruption on the face begins to get a yellowish hue, but without any exudation. In two or three vesicles on the limbs and arms, the central depression is occupied by a livid spot. Generally the vesicles have increased in size, and the flattened shape and depressed centre have become more conspicuous than yesterday; they are, however, extremely various in size, and in some parts, a small red point can be observed, as if the first appearance of the eruption in the skin. The eyes are slightly inflamed, and the eyelids considerably swelled. The inside of the lips and the palate are seen studded with a great number of minute white points like suppurated papillæ.

Vespere.—Temperature of the skin and state of the pulse nearly natural; complains of headach, and evinces much intolerance of light on the approach of a candle. He seems to labour under a depression of spirits and apprehension of the issue of his disease, which is by no means warranted by its present appearance.

18th.—Says he passed a sleepless night. It ought to have been noted before, that, ever since his admission, he has complained of watchfulness. Fresh eruption continues to appear on the trunk and limbs, where the first pustules are but moderately distended, contain lymph, and have still the central depression. On the forehead, nose, and cheeks, a greater number of the pustules have acquired the brownish yellow colour, and in a few exudation has taken place; temperature in the axilla 97°, pulse 80, tongue whitish.

Vespere.—Is restless and extremely irritable, with a painful degree of sensibility in the eyes to light.

Sumat opii gr. iij.

19th.—Slept well during the night; pulse is higher than last night, at the time the opium was exhibited, being 120; heat 100°. He complains of headach, thirst, and heat of skin. The exudation on the face increases; the pustules on the trunk and extremities are more prominent and of a more yellow colour than yesterday; the bases are of a less vivid red, and there are fewer central depressions. There is more swelling of the face, and he has considerable redness of the eyes and hoarseness. The skin between the pustules is almost natural in its appearance, unless on the arms, where it is of a rosy red.

Vespere.—Pulse is 120, and he is very hot and restless.

Repet. pilul. opii gr. iij.

20th.—Slept tolerably, and has no uneasy sensation to-day unless what arises from the skin. His pulse is 120; heat in the axilla 99°, and he has considerable thirst.

The eruption generally is more of a straw colour, the pustules are

arger, but mixed with many small points of the same character. The exudation in the face gives the appearance as if broken down elly were strewed over the pustules. The face is not more swelled ince yesterday, and there is no swelling of the hands or feet. There s more hoarseness and difficulty of swallowing.

21st.—Did not sleep last night; has some ptyalism to-day; rather ess swelling of face; the eyes are still red, and very sensible to light; as much hoarseness and slight cough; hands and feet are swelled; he pustules over the trunk and limbs are much distended, and begin o have a yellowish hue; belly open; temperature in the axilla 96°; pulse 98, and full; less thirst.

Vespere.—Pulse full; skin rather hot, but it is bedewed with moisture; feeling of uneasiness not increased.

Sumat opii gr. iij.

22d.—He is at present in a calm natural sleep; the pulse 115; emperature in the axilla 98°. A number of the crusts have dropped off from the chin and lower part of the face, leaving a considerable legree of roughness and elevation of the cuticle on which they were situated. The rest of the face is still partly covered by the crusts formed by the exuded fluid, and partly by distinct unbroken pustules. A few of the pustules on the breast have become flaccid, but the majority are still greatly distended; the skin on the breast and abdomen in the interstices between the pustules has less redness, and begins to acquire a natural colour. On the arms, legs, and thighs, there is still a good deal of inflammation of the skin, and some swelling of the hands and feet continues. On the arms and hands several vesications have arisen, including one, two, or more of the pustules, containing a transparent brownish serum, in which the opaque matter of the pustule floats.

23d.—Slept indifferently; complains of soreness of his back; has some thirst; pulse 88; temperature in the axilla 97°; belly costive; appetite still bad. Many more of the pustules on the trunk have become empty and shrivelled, and those on the extremities begin to be less distended. The large serous vesicles that appeared yesterday on the hands and arms, have fallen down, and are now nearly empty. The interstitial inflammation is almost quite gone, except from the hands and arms, in which there is still some swelling.

Sumat sulphat. sodæ ℥j., et opii gr. iij. h. s.

Vespere.—Complains much of debility and pains of his loins and nates.

24th.—Slept well, and his general feeling is much more comfortable this morning. Pain of loins and nates gone; pulse 80; temperature in the axilla 97°; has an appetite, and wishes to have a piece of chicken. A greater number of the pustules have become distended with a serous fluid on the arms and legs, so as to resemble pretty large vesications; several of them have burst. The feet still continue much swelled; the swelling of the hands is considerably diminished. Almost all the pustules on the face are converted into thick crusts; those on

the trunk are in general shrivelled and empty; while those on the legs and arms are still distended, but, as already observed, their contents are greatly mixed with a serous fluid.

Vespere.—Seems very easy and composed; pulse and temperature nearly natural.

Repet. opii gr. iij.

25th.—Slept well, and is free from fever; pulse natural; temperature 97°. His appetite improves, and he wishes for milk to breakfast. Almost all the pustules on the arms have either been absorbed, or such as were distended into blebs have burst, and are shrivelled. A few flaccid pustules still remain on the hand. All those on the trunk are dried up. They still continue on the thighs and legs, but are much less distended than formerly. In many of these the opaque fluid they contain is mixed with serum, and some of the largest blebs have burst. The swelling is quite gone from his hands, and is also much diminished on the feet.

Vespere.—No increase of fever or change of symptoms.

Repet. opium u. a.

26th.—Passed a comfortable night; feels very well this morning. Pulse and temperature natural; appetite good. The pustules on the lower extremities continue to be either ruptured or absorbed; few remain any where else; the whole surface is extremely filthy from the crusts of the ruptured pustules, and the tenderness of the skin prevents the necessary means for cleanliness being used.

Adeat baln. tepid. et cont. pilul. opii h. s.

27th.—A good number of pustules still remain on the lower extremities, but in a very flaccid state; the feet are still somewhat swelled. His appetite increases and his strength improves. Functions natural.

Contin. opium h. s.

28th.—Remaining pustules on the feet are becoming crusted; swelling of feet diminished; appetite good; bowels costive; slept ill.

Habeat sodæ sulphat. ℥j. Cont. pilul. opii h. s.

29th.—The crusts are falling off all over the body, and the parts where the matter had been absorbed are desquamating; they leave slightly elevated tubercles. Swelling of the feet altogether gone; pulse, heat, and bowels, natural.

Adeat balneum calidum. Cont. pilul. opii.

31st.—Gains strength slowly; his appetite is not so keen as it was two days ago. Pulse, heat, and bowels, are, however, natural. He complains that the half diet is too heavy for him. There is some inflammation of the conjunctiva of left eye, with some appearance of iritis.

Omitt. pilul opii. Cap. sulph. sodæ ℥j.

August 1st.—Convalescent; appetite continues to improve; bowels opened by the salts; inflammation of eye diminished.

Cap. calomel gr. iv. Foveat. ocul. aq. calid.

3d.—Iritic affection gone; two or three small ulcers on the cor-

nea; gummy exudation from the tarsi. He is otherwise convalescent.

Cont. fotus.

7th.—Eye well. No medicine.

Discharged, with several recent pits in various parts.

CASE XIV.—EDWARD DEANE, aged 18. July 18th, was admitted yesterday, complaining of headach, thirst, nausea, and soreness of the epigastrium, with cough. At present the skin is hot, the pulse full, and rather frequent; the eyes heavy and expressive of languor; the symptoms of yesterday also continue; a few red points appear on the face, breast, and arms, and on the summits of some of them, on near inspection, a very small shining vesicle can be discovered. One on the left wrist is more advanced than the others, and of a bluish hue, with a good deal of inflammation of base. He never observed the eruption till pointed out now. He says that, on the night of the 15th he had a rigor, which was followed by the headach and other febrile symptoms mentioned above. He was inoculated for variola when about nine years old, and has a very distinct cicatrix on the arm at the place of inoculation. He has beside many marks upon the body, particularly on the back and loins, resembling those left by small-pox. Says that he has repeatedly been with people labouring under small-pox, with impunity, since the time of his inoculation. He has been living in the barrack-room with the child M'Dermot (No. 11.) who was inoculated from Mr Hennen's son, and who had an eruption, by some supposed to be variola, by others varicella.

Vespere.—Febrile symptoms continue; temperature in the axilla 103; pulse full, and about 90; belly open.

Lavetur corpus aquâ frigidâ.

19th.—Passed a sleepless night, and complains this morning of headach, heat of skin, thirst, some difficulty of swallowing, and pain in the epigastrium. He has also some cough, and inclination to vomit. Pulse 88; heat in the axilla 101. There does not appear to be any fresh eruption, but the vesicles which appeared yesterday are larger, more transparent, and globular. The fauces are slightly inflamed, and small ulcerated patches of an aphthous nature, appear on the inflamed part of the membrane lining the throat.

Vespere.—He complains much of cough still; febrile symptoms are very mild; some more of the eruption has appeared on the face.

20th.—Passed rather a restless night, but suffers little pain unless from his throat. His pulse is 72, heat in the axilla 98. He has but little thirst, his bowels are open, and his appetite tolerable. His face is now quite studded with an eruption, the greatest part of which is papular, but some are vesicular, with depressed centres; there are also many papulæ and vesicles of the same sort on the trunk, and a few on the extremities.

The vesicles which first appeared on the wrists, ankles, and feet, are much larger than any of the others, globose and transparent.

21st.—Slept pretty well. Complains chiefly of soreness of his throat and headach; pulse 68; temperature in the axilla 98°; belly open, some thirst. The pain he complained of at the epigastrium is gone. Fresh papulæ continue to appear. There is great diversity in the size of the vesicles and papulæ; some of the former are as large as a split pea—while some of the latter are mere points. The vesicles contain a semitransparent fluid. There is slight redness of the eyes, and he complains of the light. On examining the throat, the velum palati and uvula are found much inflamed and swelled, and together with the palate, are thickly studded with small white vesicles. Cough continues.

22d.—He slept some towards morning; the pulse is 75; temperature in the axilla 99°. The vesicles have acquired a white opaque appearance, and are larger than yesterday, but there is still great variety in their size; their figure is also very irregular, and the inflammation at the base of each is unequally diffused, and without sensible hardness. His throat is easier. He complains much of thirst. Eyes red. Face swelled.

23d.—Did not sleep; some thirst; tongue white, but clean at the edges; belly open; face more swelled; cough continues; temperature 100°; pulse 82. The pustules on the face have thrown out on their surface a gummy exudation of a yellow colour; those on the trunk and extremities are quite purulent, and seem fully distended.

Vespere.—General symptoms as mentioned in the morning visit.

Sumat. opii gr. iij.

24th.—Slept well; has no headach; thirst less; cough continues; face and eye-lids rather less swelled; no swelling of his hands or feet; heat of his skin 99°; pulse 85. More of the eruption on the face has become covered with the gum-like exudation, and gradually acquires a darker colour. The pustules on the body and limbs have a straw colour, appear perfectly purulent, and are much distended.

Vespere.—Has no increase of fever; feels tranquil, and disposed to rest.

Repet. opii gr. iij.

25th.—Slept extremely well, and is without any uneasy feeling this morning, except what arises from the soreness of the surface; pulse natural, temperature 98°. On the face many of the crusts have fallen off; others of the pustules are in different stages of incrustation, while a few retain their purulent distended form. On the cheeks, among the pustules that have become encrusted, a number of inflamed papulæ of considerable firmness and hardness under the finger, are to be observed, which like the others are in various degrees of progress, some having acquired yellow suppurated tops, while others appear in their commencement. I am uncertain whether some or all of these are not the tubercular bases from which the crusts of the former pustules have dropped off, but if they are, many of them have again acquired a yellow purulent top. On the chest some of the pustules have been absorbed, and the cuticular sacs have fallen down shrivelled. The greater number, how-

ever, remain distended, and retain their purulent straw colour. Many small papulæ appear intermixed with the more perfect pustules, many of which have the appearance of being in their commencement. On the arms, thighs, and legs, the pustules are still distended and purulent. The swelling of the face is nearly gone, and there has appeared no swelling of the hands or feet.

Vespere.—The hands are slightly swelled; no other change.

Repet. opium, u. a.

26th.—Slept well, and feels himself very easy this morning. Functions natural; appetite good; most of the pustules on the face and trunk are dried, and on the extremities are gradually collapsing; a few have burst.

Repet. opii gr. iij.

27th.—Appetite increases, and all the functions are natural, except some degree of costiveness of the bowels. On the face, particularly the cheeks and chin, the small tubercular eminences, formerly supposed to be fresh eruptions, are extremely numerous, and from their firm structure, and apparently chronic nature, are probably the bases of the former pustules, from which the scabs have been detached. There are none now, which have the yellow suppurated top formerly noticed. The pustules on the legs are still pretty numerous, but flaccid, and half empty. The slight degree of swelling which appeared on the hands is quite gone.

Sumat. nat. vit. ℥i.

Repet. opium h. s.

28th.—Tubercles continue the same on the face and trunk. Some of the remaining pustules on the extremities are forming crusts; in others the matter is absorbed, the cuticle falls down, and afterwards desquamates as on the trunk; in others, the cuticle is first ruptured, the contained fluid exudes, and the same process takes place as in those where the matter is absorbed. Pulse, heat, and functions natural.

Omit t. opium.

31st.—The tubercles on the face are diminishing in size, and leave pits. On the trunk and extremities, where absorption of the contained fluid and desquamation have taken place, there is little appearance of tubercles. He is in every respect convalescent.

August 1st.—Dismissed.

Case XV.—Thomas Davis, aged 26, has been in hospital since the 24th July, preparatory to an operation on his eyes.

August 2d.—Yesterday evening he was attacked with pain in his head, back, and limbs, with alternate chills, and flushes of heat, with nausea and slight vomiting. He passed a very restless night, and to-day is hot, thirsty, and tormented with pains in his back and limbs. His pulse is 100, and pretty strong, his appetite gone, and his bowels costive.

2d.—Sumat. calomel. gr. viij. et postea infusi sennæ, q. s. ad alvum fortiter ducend.

Vespere.—Medicine has operated; the infusion also has produced copious vomiting, but he is not relieved; his skin is hot and dry; pulse 110. Sumat. pulv. antimonial. gr. v. utatur pediluvio.

3d.—Passed a very restless night, but perspired profusely. As might have been expected, the antimonial brought on vomiting. He still complains greatly of pains in his head, back, and loins, to which is added to-day pain in the epigastric region, which is much increased on pressure. The skin is hot, but moist; pulse 110; tongue white, great thirst, and nausea on taking any thing but cold water into the stomach. As this man now acknowledges that he has never had variola nor cow-pox, and as, according to his belief, he has never had chicken pox, there is but too much reason to fear, that his present illness proceeds from one or other of these specific contagions, as in the opposite ward to where he is, there have been three cases of eruptive fever, concerning the real nature of which there have been some doubts. This man joined the 88th in France, from the 39th regiment, in July 1815. He has some marks, apparently of small-pox, on his back, so that there was no suspicion that he had not had that disease, and he never confessed until now, that he had it not.

Tegatur quam leviter corpus.

Admitt. liberrime aer egelid.—et habeat pro potu commune aqua fontana.

Vespere.—He still complains of pains in the head, loins, and epigastrium; the pulse is 115; the skin hot, but moist; bowels open. Several small red points are perceptible on the forehead and nose.

4th.—Passed a very restless night, being very hot, and tormented with headach, and pain of the loins. To-day the pains are fully as severe as ever, particularly in the loins. There is still some pain in the epigastrium on pressure, and tendency to nausea. His pulse is 100; heat in the axilla 102; tongue white, but quite moist; little thirst; his bowels were opened last night. More of the eruption has appeared on the face, and a few points on the neck, the trunk of the body, and about the wrists and ankles. The eruption is papular; the papulæ are acuminated, about the size of pin heads, of a bright red colour, and polished.

5th.—Passed a very restless night, but complains less to-day of the pains of his back and limbs; his pulse is 100, and pretty strong; heat in axilla 103. The skin is soft, and during the night has been bedewed with moisture; he has no thirst; his tongue is white, but quite moist; bowels open. More of the eruption has appeared on the face, neck, and extremities; indeed it is now quite confluent on the face, where he has an uneasy sense of burning heat. On some of the papulæ small pearly vesicles have arisen, which in a few instances are depressed in their centres, but by far the greatest part of the eruption is yet papular.

The papulæ are of various sizes; some as minute as pin points;

some nearly as large as split-peas; all of them nearly circular, red and shining.

Habeat. potum egelidum et acidulatum.

Lavet. facies aq. frigid. cum aceto mista.

Vespere.—Continues much in the same state. More of the eruption seems to have appeared since morning; but to determine this with greater precision, a space, one inch broad and about four long, was marked on the breast, which contains three papulæ; another circular one, an inch in diameter, on the neck, containing two papulæ; a third oblong one on the left arm, four inches long, containing nine; and two rather smaller on the right arm, without any eruption.

Sumat ext. opii gr. iii.

6th.—Slept a good deal during the night; but was frequently disturbed with disagreeable dreams and delirium. He feels, on the whole, better to-day than yesterday. His pulse is 90, and soft; heat in the axilla 102. He has a very little thirst, but the tongue is yet quite moist; bowels not opened since yesterday morning. The eruption is still more confluent on the face, and many new points have appeared; for instance, in the first space marked, there are now twenty instead of three; in the second, there are eight instead of two; in the third, there are thirty-six in place of nine; and on the blank spaces on the right arm, there are now twelve in one, and nine in the other.

The eruption is now generally vesicular, though there are still many papulæ, and a few approaching to the characters of tubercles. The vesicles are pearly coloured, and many of them depressed in their centres. The bases of the vesicles, and the papulæ and tubercles, are of a raspberry colour. The fauces are considerably swelled, red, and studded with vesicles.

Admittr. liberrime aer egelidus. Habeat potum frigid. acidulat. et utat. gargarism. astring.

Vespere.—Complains more of his throat; the tonsils and submaxillary glands are much swelled, and there is considerable ptyalism; the face also is considerably swelled, particularly the nose and lips; bowels not open to-day.

Sumat calomel, gr. viij.

7th.—Passed a very restless night, but does not on the whole think himself worse to-day. He complains however of his throat, and of soreness and stiffness of the face and skin generally; his pulse is 86 and soft: heat in axilla 100; he has less headach, and no pains in the loins or epigastrium; anorexia is gone; tongue white, but kept very moist by the copious ptyalism which has appeared; bowels not yet opened. More of the eruption has seemingly appeared, but from the marks being obliterated, this cannot be stated with accuracy. Very little of it now remains in a papular state, being almost every where vesicular.

The vesicles have rather irregularly circular bases, of a fine raspberry colour. On the face these bases extend so far, and the vesicles

are so close, that there is not a single point unless the under eyelids, which are not of a deep raspberry colour. On the trunk the eruption is here and there more sparse, but in many places it is collected into crowded patches, and this is particularly the case on the extremities. The vesicles themselves are of a pearly colour, broad and flat compared to what they were yesterday; few of them have depressed centres. On the soles of the feet, which are completely studded, the vesicles are below the level of the skin, but are marked out by a pearly ring inclosing a transparent globule of fluid. Face is more swelled and fauces more inflamed.

Sumat. post horam, si non prius descendat alvus,
Magnesiæ sulphat. ℥j.
Contin. ablutio frigid. et potus accidulat.
Habeat. linct. accidulat.
Sumat. vespere ext. opii gr. ij.

8th.—Passed a very restless night, but does not on the whole think himself worse this morning. He has no pain unless what proceeds from the throat and skin; his tongue is moist, though still white; he is not unusually thirsty; his bowels were once opened by the medicine given yesterday; his pulse is 106, heat in axilla 102. The face is swelled to an immense degree; the submaxillary glands are greatly enlarged, but there is little ptyalism.

More of the eruption has appeared; the vesicles are broader but flatter; they retain their pearly colour, generally speaking; but a few of them on the face are of a yellowish hue, and feel rough to the finger like the surfaces of ragged warts. Very few of the vesicles are now depressed in their centres; some of them are small, prominent, and circular, while others are large, flat, and irregularly shaped. The colour of their bases is of a deeper raspberry than yesterday.

Fauces are still much inflamed, and a very thick mucus is secreted, causing great hawking and spitting.

Repet. magnesiæ sulph. ℥j.
Cont. potus acidulat. et linctus ut heri.

Vespere.—He is more anxious, and complains more than in the morning, but the complaints are more referable to apprehensions of a fatal termination of his disease, than to any new topical affection, or increase of the old.

Sumat. ext. opii gr. iij.

9th.—Passed a very restless night, and is anxious and very irritable to-day. He complains principally of his throat, where the inflammation and swelling are now so great as to render deglutition very difficult; he has also headach to a considerable degree; his pulse is 100, and smaller; heat in the axilla 102; there is no thirst, but the tongue is much loaded, though kept moist by the great ptyalism. He was unable to swallow the purgative, and his bowels were not opened until an enema was given this morning, which produced two copious stools. The body is so covered with the eruption, that it is

impossible in reality to say whether fresh vesicles have come out, though it appears so. Several more of the vesicles on the face have acquired the same roughness and change of colour as those mentioned yesterday; indeed, the whole of those on the face are of a yellowish hue, and the redness of their bases is less vivid.

On the body the eruption is still of a pearly colour; the vesicles are broader but flat; the redness of their bases is more of a rosy hue, the swelling of face is increased, more particularly of the eyelids; ptyalism profuse.

Contin. potus accidulat. Inhalatur vapor aq. calid.

Vespere.—He is not worse than at the morning's visit, but very restless and uneasy.

Sumat haustum e tinct. opii gtt. xc.

10th.—Passed a very good night, and thinks himself much better to-day. Headach is almost gone, and he has no uneasy sensation unless what arises from the stiffness of the skin. His pulse is 112, and rather small. Heat in the axilla 102. He has no thirst; his tongue is white, but kept moist by the copious ptyalism; his bowels have not been opened since yesterday morning. The swelling of his face is less. The fauces and submaxillary glands are not quite so much swelled, and deglutition is rather easier. The whole of the eruption on the face has now become incrusted, the surface of the crusts being of a yellowish colour. The bases are still of as bright a red, and so much compacted, that there is scarcely over the whole body a point of skin of its natural colour. On the soles of the feet the pearly ring is now of an opaque white, and the transparent centres of the vesicles are of a yellow colour, but there is still no elevation to be felt by drawing the finger over them. On the trunk and extremities the vesicles have become of a chalky white, having their centres of a semi-transparent straw colour.

Inhalat. vapor. aq. calid. ut heri.—Sumat. olei ricini ℥i.

Vespere.—Has had a good deal of vomiting since he took the oil. It has not produced any evacuation by stool.

Habeat enema purgans, et alvo soluta sumat. tinct. opii gtt. xc.

11th.—The injection produced only one stool. The vomiting ceased after taking his draught, he slept a good deal through the night, and he feels much better this morning. He has still slight headach, and is very desirous to drink, but is deterred from indulging himself on account of the pain, and difficulty of deglutition. There is still considerable ptyalism; swelling of face continues, but there is none perceptible in his hands or feet. The incrustation of the pustules on the face is more perfect than yesterday, but the pustules on the trunk and extremities still retain their chalky appearance, with the exception of a few, which are beginning to assume a light straw colour. They are all of a flattened shape, and do not appear much distended. There appears to be very little hardness or elevation of

their bases, but the interstitial skin presents a uniformly inflamed surface. Heat in the axilla 103; pulse 110.

Vespere.—There is little change in the general state of his feelings since the morning; feels no disposition to sleep.

Sumat tinct. opii gtt. xc.

12th.—Slept well last night, and is disposed to sleep at present. Swelling of the face has subsided in some degree. The ptyalism continues. There is no swelling of the hands or feet. The change of colour from a chalky white to a light straw colour in the pustules on the trunk and extremities, has become more general, and on the arms and hands several of the pustules have crusted, so as to form large bullæ, of a darker brown colour than the others. The interstitial skin retains the uniform erythematous redness described yesterday. He has less difficulty of deglutition; belly open.

Vespere.—General symptoms nearly as described in the morning.

Sumat ext. opii gr. iv.

13th.—He slept pretty well during the first part of the night, but was watchful towards morning. The swelling of the face is almost gone, except that of the eyelids, which are still tumid. The ptyalism appears to be gone. No swelling has taken place in the hands or feet. The bullæ, which yesterday were mentioned as being formed by the union of several contiguous pustules, have burst, and are dried up. In other respects, the eruption seems to have undergone very little change since yesterday. The erythematous redness of the skin is perhaps less vivid than before. Pulse 136; heat in the axilla 104°; belly open.

14th.—Had his opiate last night, but he says himself he did not sleep; the other patients however say he slept well about four hours in the beginning of the night. He betrays unusual impatience and irritability of temper. He expressed great impatience for his breakfast, and took it with a good appetite; pulse 118; temperature 104. The pustules on the back, with many of those on the breast and arms, have burst. All the others have become quite flaccid from the absorption of their contents. The erythematous redness of the skin is much less vivid, and in a few parts it has acquired its natural whiteness.

Habeat vin. rub. ℥iv. in die.

Vespere.—Has much general uneasiness, but without being able to describe particularly his feelings. He complains of cold, and at the same time the surface gives to the hand a pungent sensation of heat; the pulse is tremulous and indistinct; the ptyalism has recurred in a slight degree; the smell arising from the body has become more nauseous and disagreeable.

15th.—He died this morning at five o'clock.

Sectio Cadaveris.—On opening the head, there was found in all the ventricles of the brain, and in the cavity of the spine, a considerable quantity of serous fluid. The pineal gland was larger than usual,

semi-transparent, like a straw-coloured pustule, and was found to contain purulent matter. *

About two ounces of serous fluid were contained in the right cavity of the chest; in every other respect, the viscera of the thorax were remarkably sound.

The viscera of the abdomen were also natural, except that the omentum was somewhat redder than usual, and the stomach much contracted in size, and its veins turgid. The gall-bladder was a good deal distended with yellow bile. The entire tract of intestines were free from pustules, but a few could be traced on the œsophagus, dispersed from the pharynx to the cardiac extremity of the stomach. No ulceration of the cutis vera was to be observed.

In my various examinations of these cases, I could never perceive the peculiar variolous smell mentioned by most authors, and familiar to many practitioners. I attributed this to the great attention paid to cleanliness and ventilation, but other observers were very sensible of a peculiarity of smell. In my son, for instance, there was remarked a pungent sulphureous smell, both of his person, bedding, and clothes, for two or three days after his fever had abated, which his mother supposed to proceed from fire-works, which she imagined the boy might have been amusing himself with. She describes the smell as precisely similar to that from the explosion of gunpowder, and the domestics, and other members of my family, concur in the same representation, and were even induced to search the child's pockets before the circumstance had been mentioned to them, but in vain. Dr Hugh Ferguson, on one occasion, complained to me, that he perceived a peculiarly pungent odour about Redmond, which was so tenacious, that he did not recover his natural sensation for some hours after having left the ward in which he lay. Mr Johnston always perceived a sickening heavy disagreeable odour both about Redmond and Delany. Dr Bartlett frequently endeavoured to trace any distinctive smell, but without success; one day, however, on the bursting of some of the bullæ on the legs of Delany, he was most forcibly struck with the peculiarity of the smell, a peculiarity which no words could express. In Davis's case, although I smelled to the recently opened pustules, where they had run together into a large bag of purulent matter, I could detect no smell. Mr Johnston, however, and others, were very sensible of a peculiar-

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* Would this matter have communicated small-pox? That of common external abscesses does not.

ly disagreeable, though not pungent smell, whenever the bed-clothes were lifted from his person. Dr Thomson was equally insensible to any smell as myself; but I ought perhaps to mention, that there is no animal smell to which I am particularly sensible, except that which attends hospital gangrene; and this I have often distinguished before entering a ward, while those who were dressing the patient did not perceive it.

The following case occurred at the Glasgow Military Hospital, under the care of Doctors Jones and Barry, of the 40th regiment. I give it in Dr Jones's words; and, although it does not belong to the series already related, it is so striking, and gives rise to so many important considerations connected with the present inquiry, that I shall make no apology for inserting it.

"Angus Monro, aged 26, a recruit for the 78th regiment, a highlander, was reported on the 30th of June. Says that he was a little unwell some days back with symptoms of fever. He has now eruptions about the shoulders and thighs, apparently of distinct variola, but attended with little or no efflorescence; he is perfectly free from fever. By the account of the serjeant who brought him, he was inoculated at the vaccine institution on the 15th of June, and directed to return in eight days after, when the vesicle was pronounced genuine. At present (30th) the inoculated part presents a brown, broken, scab. July 4th, eruptions filled with thick pus; no constitutional fever. 8th, Matter becoming dry and falling off in scales. 17th, The eruption has totally disappeared, leaving scarcely any, or very shallow pits.

"The man's general health has been perfectly good since his admission into hospital; but being unable to speak a word of English, I could not obtain the whole of his history from himself. It appeared to me that the constitution, being partially affected with the vaccine virus, greatly modified that of variola."

On my late visit to Glasgow hospital, I wished much to see this man, and ascertain the state of the cicatrix, but I was disappointed. The following extract of a letter from Dr Barry is, however, sufficiently satisfactory: "August 10th.—On Saturday last I had an opportunity of inspecting Monro. The scab had fallen off, leaving a mark on the cuticle of a dark brownish hue about the size of a sixpence, with several small pits, or cellular cicatrices spread over it, not very deep, but perfectly apparent to the naked eye, and promising to leave a permanent mark."

Many instances similar to the above are on record, where

variola being contemporary, or nearly so, with vaccination, the former has been modified by it. A most striking proof of this is given by Dr Derenzy, in the correspondence of the directors of the Cow-pock Institution of Dublin. A child had been inoculated with small-pox, and on the same day Dr D. inserted the vaccine virus; the variolous pustule and vaccine vesicle exhibited the usual appearance, but no eruption ensued; the child was more indisposed than usual in cow-pox, but not so much as all around it who had been inoculated with variolous infection. Mr Roulston in the same publication mentions, that he vaccinated five children in the same family; the small-pox appeared on one the third day; the other children went regularly through the stages of cow-pox, and did not take the variolous infection, though lying in the same bed with the child labouring under small-pox. Mr Chamley, surgeon of the South Cork Militia, mentions a case of variola and vaccine proceeding together, the child having imbibed the former disease unknown to him; the variola was the very mildest he ever saw. Mr Brady, surgeon of the Leitrim Militia, mentions a case where vaccination suspended the progress of variola; and Dr Hall of the Roscommon Militia has, in many instances, succeeded in preventing small-pox from spreading, by vaccinating children in the same house with others labouring under that disease. (See also Bryce on the Cow-pox, 2d edition, page 104 and 192.)

So perfectly convinced am I of the preventing and modifying powers of the vaccine inoculation, that I should never hesitate about employing it, even though it were probable that my patient had imbibed the small-pox infection; nor should I be deterred from the practice, by the idle suppositions of the nurse that I was too late, or the learned objection of the doctor that the two diseases could not coexist; experience very clearly demonstrating, that there is still something in the mutual relation of these diseases to each other, that has not been yet satisfactorily elucidated.

If any fact on record should have more weight than another on the subject of the preventive powers of cow-pox, it is the recent and well authenticated one, related by the Directors of the Institution in Dublin, from whose correspondence I have derived some of the interesting facts alluded to in the preceding paragraph. They state in their report, dated January 1st 1818, "That many remarkable instances of exposure to variolous contagion, and of subjection of the powers of vaccination to the most rigorous tests, are detailed by their correspondents. One case deserves to be particularly mentioned, as having fallen under the immediate observation of the directors. A patient de-

livered at the Lying-in Hospital, was seized with confluent small-pox; her infant was vaccinated a few hours after birth; the cow-pox proceeded regularly, and the child was not attacked with variola, although never separated from the mother, who died of the disease on the 11th day."

I shall not intrude much longer on the time of your readers, but shall offer only a few of the numerous suggestions which the foregoing cases give rise to.—After the most mature consideration, I must explicitly avow, that nothing has occurred in these cases which has in the smallest degree shaken my opinion of the great and pre-eminent importance of the practice of vaccination, whether we view it as a preventive of small-pox in a vast majority of cases, or as a most effectual neutralizer of its malignity in the comparatively few instances in which, from some peculiarity of constitution, or some anomaly in the process, hitherto not fully developed, it has failed to afford this permanent security.

On the contrary, it appears to me, THAT THE WHOLE SERIES OF CASES WHICH I HAVE GIVEN, PRESENT THE MOST TRIUMPHANT EVIDENCE IN FAVOUR OF VACCINATION, AND PLACE, IN A MOST CONSPICUOUS POINT OF VIEW, THE INFINITE ADVANTAGES TO BE DERIVED FROM THE PROCESS, WHEN JUDICIOUSLY CONDUCTED.

If the more anomalous among the foregoing cases are considered as merely aggravated instances of Varicella, the value of the Jennerian practice is in no shape affected by them, except, indeed, that it is clearly shewn, that that practice renders not only Variola but Varicella also more mild; for in the cases Nos. 3 and 5, as well as in that of my youngest son, and of the child 6 mentioned at page ~~414~~, all of whom had been satisfactorily vaccinated, the disease was very mild, and it was beyond comparison milder in my vaccinated son, than in some of the unvaccinated children who were inoculated with matter taken from him. It is also well worthy of remark, that a vaccinated child who slept in the same room with O'Neil, (No. 6,) and was in hourly communication with her, escaped all disease whatever, while both the unvaccinated children in the room with Hogg, (No. 7,) caught the disease from him. One vaccinated child only, out of eighteen, caught any disease in the Castle, from the inoculated children.

I cannot but direct the attention to the vaccine character, both in the external appearance, and in the internal cellular structure of the vesicle, which was impressed on the disease communicated from my son, as will be apparent on perusing the cases, and which was so strongly marked, that Mr Bryce, whose perfect acquaintance with the vaccine vesicle in all its forms is univer-

sally acknowledged, was forcibly struck with the great similarity to the genuine cow-pock, which the vesicle on the arm of the child O'Neil (No. 6.) presented, and the very striking resemblance which that on the arm of the child Hogg (No. 7.) (the very severe case) bore to the spurious cow-pock. *

If, on the other hand, the foregoing cases are considered as the Horn-pock, or the Steen-pock, that disease, as I understand from the first medical authorities, was well known in this country before the introduction of vaccination, and frequently occurred in persons who had previously gone through the genuine small-pox, *although never noticed of later years as an objection to variolous inoculation.* In this case also, Vaccination will be found to have manifested its neutralizing powers. But I have witnessed it still more remarkably among the children of the lower class in the neighbourhood of the Castle, where, while this disease has raged violently among the non-vaccinated children, many instances have occurred of those who have gone through that process, having the complaint in the very mildest possible form, and many of them escaping it altogether; a fact exhibiting the results of a more rigid ordeal of the preventive powers of vaccination, than can be imagined by those who have not witnessed the incredibly crowded and confined apartments, in which these compact masses of human beings gasp for air, while, from the mutual friction of their bodies under the same scanty covering, the most intimate contact takes place between the sound and the diseased, and, in many instances, effects a complete and constantly renewed inoculation. †

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* Vide a very interesting paper by this gentleman, Edin. Journal, Vol. VII. p. 410. for further observations on this character.

† Dr Thomson first took me to see the children alluded to in the text, and I afterwards had an opportunity of seeing others, with Drs Monro, Duncan, and Abercrombie, Mr Bryce, Dr Tweedie, and Dr Bartlett. The following facts may assist the reader in forming his judgment.

In one room, under the Castle Hill, having one window, one door, and one fireplace, of the dimensions of 13 feet by 10, and eight high, and containing the father, mother, and five children in two beds, all the children were ill of an eruptive disease. They had all, by the mother's account, been vaccinated. The youngest, who presented a genuine cicatrix, had a very slight disease, with very little fever; the elder children, in whom the cicatrices were by no means so well marked, had a very severe disease.

In another room in the same pile of buildings, with one window, one door, and one fireplace, 14 feet by 11, and eight high, lived the father, mother, and four children. They all slept in the same bed. Of the children, three presented the genuine cicatrix; they all escaped disease. One who never had been vaccinated, or had small-pox, took a most severe disease, and died on the seventh day.

Finally, if it be admitted that the disease in the adults was Small-pox, whether genuine or modified, it adds five more additional proofs, to those already on record, of that disease occurring a second time in the same individual, and with this very remarkable circumstance attending them, that they all occurred consecutively, and in all human probability from the same source of infection. An officer of dragoons now in this neighbourhood, is another authentic living instance of the disease a second time, and many persons under similar circumstances are still in existence; Dr Bateman has lately given us two unequivocal cases of the same kind, in the second volume of the Me-

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In the next room to this, with one door, one window, and one fireplace, 11 feet by 9, and eight high, lived the father, mother, and three children, and all slept in the same bed. One child had a few specks, rapidly drying up on the fifth and sixth days, with little fever; its arm presented the genuine vaccine cicatrix. Another child, with a questionable cicatrix, had several specks drying up on the sixth day, with much more fever than the first child; but the third child, who never had been vaccinated, had a very severe disease, the eruption continuing nine days out, before it began to crust.

In a house at the bottom of Currie's Close, somewhat more distant from the Castle than the former houses, and in a very confined situation, resided a man, his wife, and four children, in a room with one door, one window, and one fireplace, 15 feet by 10, and seven and a half high. They had but one bed. Three of the children, who had had the natural small-pox two years before, escaped all disease whatever; the fourth, who had never had small-pox or been vaccinated, was attended by Dr Maclagan in a most severe confluent disease, allowed, without any question, to be small-pox, of which it died on the 17th day. In the opposite room, separated only by a narrow passage, of the same dimensions, and with similar means of ventilation, lives a shoemaker, his wife, and four children. They have but one bed. All the children had been vaccinated; three of them have the genuine cicatrix, extremely well marked, and escaped the disease altogether; the fourth had a very few horny spots, which dried up on the sixth day of their eruption, and were attended with little or no fever; the cicatrix on its arm is by no means so distinctly marked as that of its brother and sisters.

In another house, where the eruptive disease raged above, below, and on each side, and had in one instance proved fatal, a child, with a remarkably distinct cicatrix, was shown to me by his mother, with no small share of triumph, as having escaped all disease, though he slept with those who had it, played all day in the same room, fed out of the same bowl, and used the same spoon as they did.

On calculating the dimensions of the above mentioned low roofed apartments, it will be found, that in some the number of superficial square feet to each resident scarcely exceeded $18\frac{1}{2}$, and that in the least crowded it was no more than $25\frac{2}{3}$. In military hospitals we never allow less to each bed than a superficial square of 36 feet, however high the roof of the room may be, or however ample the means of ventilation, but we are very seldom reduced so low as this; in the Castle hospital our allowance is 72 feet, and in the Depot 78, to each patient, while the roofs are about 10 feet high in each, with an ample supply of cross windows, doors, fireplaces, and ventilators, both in the walls and ceilings.

dico-Chirurgical Transactions, and has referred to some others, among them some fatal cases. But for the satisfaction of those who may wish to consult and analyse many more authors, or who, from their access to extensive libraries, may have an opportunity of seeing the original works, which in some instances I have not enjoyed, I give in a note, a very long catalogue, the basis of which is formed from the "Literatura Medica Digesta" of the learned and industrious Ploucquet, to which I have added a few more recent authorities. It is probable that others are to be found on record; and that many since the time of Rhases have escaped all observation whatever, or, in the unbounded confidence of practitioners in the universality of the law, that the disease can be taken but once, have been set down as cases of aggravated or confluent varicella. A sufficient number of unquestionable cases, however, are extant to prove, that, if vaccination does not afford an *infallible* preventive of the subsequent occurrence of small-pox *in all cases*, neither does the previous existence *even of small-pox itself*, act as an *infallible* preventive of its future recurrence. It is worthy of remark, that, from the experience of some of the living authorities quoted below, the cases of small-pox a second time have in several instances occurred after inoculation with the variolous matter, and in some have proved fatal. I refer particularly to the evidence of Messrs Ferris, Ryan, Simpson, Walsh, and Sayers, in the very valuable documents recently published by the Directors of the Dublin Cowpock Institution, which so triumphantly demonstrate the superiority of the vaccine inoculation. There is also one very valuable fact stated by the latter gentleman. He met with an instance, where the *true* small-pox occurred a second time in a person who had previously gone through that disease, and who in the interval had varicella.*

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* The doctrine of the occurrence of small-pox a second time was first broached by the Arabian physician Rhases, who wrote in the 10th century; and Avicenna, in the 11th, concurred in opinion with him. Since their days, eminent men of all countries and periods have delivered the same doctrine. John of Gaddesden, who flourished in England in the 14th century, states it in his "Rosa Anglica" as an occasional occurrence. Peter Forestus of Alkmaar, who flourished in the 16th century, gives the case of his own son and of others, who underwent a second attack. A son of Fracastorius, the poet and historian of Verona, who lived about the same time, suffered also the same repetition of small-pox. Willis repeated the observation of John of Gaddesden in the early part of the 17th century in England, and, about the same period, Diemerbroeck witnessed numerous instances in Holland.

After inoculation had been patronized in these islands by Queen Caroline in the early part of the 18th century, and two of the royal family had been sub-

Laws which we can never develope, govern the susceptibility to variolous contagion; and it is highly probable, as has been observed by the ingenious Jenner, "that the susceptibility to receive it always remains through life, but under various mo-

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jected to it in 1722, in consequence of the well known letter and the example of Lady Mary Wortley Montague, the whole mass of the ignorant population, and a few of the clergy, were loud in their reprobation of the practice; inoculation was represented as irreligious, and even atheistical!—and the Rev. Mr Massey, in a sermon preached in London on the 8th of July 1722, not only accused the patrons of the practice of being "hellish sorcerers," but stated the very extraordinary historical and pathological fact, that Satan himself had been an inoculator, and that Job had been his patient! The following was the passage of Scripture upon which this learned and profound divine declaimed:—"So went Satan forth from the presence of the Lord, and smote Job with sore boils, from the sole of his foot unto his crown."

A very different opinion had been formed of Job's complaint, by some other sagacious critics, upon grounds equally conclusive. But be that as it may, the wags were determined to support the medical character of the Devil; and they produced the following Epigram upon the subject, more distinguished for its point than its poetry:

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

(Vide Woodville's History of Inoculation, and Moore's History of Small-Pox.)

The learned Dr Mead exerted himself to repel these absurdities; and, in his zeal for inoculation, positively denied that small-pox ever happened twice, in order to prove the vast utility of submitting to that process, and having all fears of the natural disease at once terminated. Van Swieten, who was very firmly prepossessed against inoculation, also positively denied the truth of the reported occurrence of small-pox a second time after the *natural* disease; but he declares that there were many undeniable examples of persons, who had the disease by *inoculation*, contracting the genuine variola afterwards; and thus, as the ingenious historian of small-pox justly observes, "one prejudice overcame another, and truth prevailed." The death of Louis XV. by an attack of small-pox at the age of 64, after having already had it when a youth of 14, is well known, and rung all over Europe; but, since the discovery of the illustrious Jenner, the Antivaccinists, in their anxiety for the honour of small-pox, have made a point of denying the possibility of its recurrence in the same individual, under any circumstances. The following list of references to cases of this description, will, I apprehend, satisfy the most sceptical upon this point, if any human testimony can satisfy them,

Aasheim in Act. Reg. Soc. Med. Hafn. Vol. III. p. 330.

Aaskow, or, (according to Kühn, in his Thesis, p. 8.) Anonymous, in Collect. Soc. Med. Hafn. II. p. 91.

Act. Nat. Cur. Vol. III. Obs. 34.; Vol. V. Obs. 31.; Vol. X. Obs. 64.

* Adams's Answer to all Objections, p. 29.

* Adams's Thesis De Variola et Vaccina. Edinburgh, 1814.

N. Act. Nat. Cur. Vol. VII. Obs. 31.

Allgemeine Literaturzeit, 1789, p. 839.

difications or gradations, from that point where it passes silently and imperceptibly through the constitution (as is frequently the case with cow-pox), up to that where it appears in a confluent state, and with such violence as to destroy life."

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* Amatus Lusitanus Curat. Med. Cent. 3. Schol, p. 453.

Andresse, Dis. de Variolis eundem Hominem pluries infestantibus. Halae, 1810.

* Azzoguidi, Lettera sopra il Vajuolo, p. 7.

Baldinger, N. Magazin, X. B. p. 316.

* Bateman in Medico-Chirurgical Journal, Vol. II. p. 31.

* ——— Edinburgh Medical and Surgical Journal, Vol. VI. p. 123.

* Blane, Sir Gilbert, Serious Address to the Public, published anonymously, 1811.

Borellus, Cent. 3. Obs. 10.

Bresl. Samml. 1717, p. 25.

Brera, Giornale di Medicina, I. n. 4.

* Bryce on Cow-Pock, (case from Jenner,) p. 62; and App. IV. 2d edit.; and in Monro's Observations on Small-Pox, p. 32.

* Burserius, Institution. Medicin. Vol. II. p. 157; or, translation by Brown, Vol. III. p. 10.

* Buchan's Domestic Medicine, 7th edit. p. 218.

* Buckwald, Compend. Med. Pract. Fasc. 1. c. 21. § 210.

Burton, Journal de Médicine continué, Vol. XII. p. 201.

Camerarius, Theses misc. Tub. 1724.

Chretien, ueber die Impfung der Blattern, p. 115.

Commerc. Liter. Nor. 1741, p. 66; 1742, p. 413.

De Copello in Verhandelingen van Haarlem, 8. 2. p. 206.

Darcet in Gazette de Santé, 1788, n. 10.

* Deering's Improved Method of treating Small-Pox, 1737; and also in Woodville's History of Inoculation, Vol. I. p. 217.

* Diemerbroeck, Anatomy of the Human Body.

——————— de Variolis et Morbillis. Hist. I.

Van Doeveren in Verhandelingen van Haarlem, 12. n. 6.

——————— Verhandeling over de Waare Kinderpokjes die meer dan eemal den helfden Menschen antasten. Haarlem, 1770, 8.

* ——————— in Comment. Lipsiæ, V. XVIII. P. 4. page 586.

* Dryfhoult, Com. Soc. Scient. Haarlem, T. VIII. P. 2. page 260.

* Dunning, Case reported in Lond. Med. Repository, Vol. III. p. 204; and in Moore's Reply to the Antivaccinists, p. 55.—I have not been able to meet with the original pamphlet.

* Edinburgh Medical and Surgical Journal, Vol. III. p. 156; Vol. VI. p. 123; Vol. XIV. p. 397.

* ——— Review, Vol. IX. No. 17, p. 32. *et sequent.*

Ephem. Nat. Cur. Dec. 2. Ann. 4. Obs. 29. Ann. 6. App. p. 12.

Farion, von Zweimaligen Pocken, 1763, 8.

* Ferris in Correspondence of Dublin Cow-Pock Institution, 1818, p. 14.

Forestus, L. 6. Obs. 43.

Gastelier in Gazette de Santé, 1777, p. 30.

Gazette Salutaire, 1761, n. 38; 1765, n. 7, 8, 40, 43, 45, 49; 1766, n. 4.

——— de Santé, 1776, p. 127.

Girardi, Ritorno del Vajuolo. Padua, 1776.

The fact of small-pox partially affecting persons who have already had the disease, while employed as nurses to children labouring under it, proves this to a certain extent; but the existence of

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Goulard in Journal de Médicine, T. X. p. 257.
De Haen, Rat. Med. P. 9. c. 7. § 2, 3.
Hafner in Baldinger N. Magazin, X. p. 316.
Hagendorn, Cent. 2. Obs. 60.
* Haller's Beytr. von. Crell, B. 2. p. 359. Note A.
Hartenkeil in Salzb. Med. Chir. Zietung, 1800, 4. p. 218.
Hensler, Diss. de Morb. Varioloso, 77.
* —— in Medical and Physical Journal, Vol. XII. p. 318.
Hufeland, Bemerkungen, p. 221.
———— Journal der practischen Heilkunde, 13 B. 3 st. p. 166.
* ———— Journal, Vol. XL. c. p. 87. Berlin, 1815.
Jahn in Stark H. Archiv fur die Geburtshuelfe, &c. 2 B. p. 174.
* Jenner, in Medico-Chirurgical Transactions, Vol. I. p. 272.
* ——— Further Observations on the Variolæ Vaccinæ, 1799.
* ——— Continuation of Facts and Observations on Variolæ Vaccinæ, 1800.
Journal des Scavans, 1759, p. 346.
* Jovanelli Avis sopra la salut. uman, 1776, N. 9, p. 71, N. 10, p. 79.
* Jurin, in Philosophical Trans. No. 373, Vol. XXXII. p. 191, or Old Abridgment, Vol. VII. p. 621.
Kite, in Memoirs of the Medic. Soc. of London, Vol. IV. p. 114.
Klaerich, in Berlin Magazin. IV. p. 473.
———— Hannov. Magazin. 1776, n. 93.
* Krapf, in Hufeland's Journal, Vol. XL. p. 87. Ann. 1815.
Kuhn, Pr. de variolis bis eundem hominem infestantibus. Lips. 1812.
* Lane's Address to the Inhabitants of Arundel, May 17, 1810.
* Laird, in Edin. Med. and Surg. Journal, Vol. III. p. 156.
* Lilius Avis sopra la salut. uman, ann. 1777, p. 167, and ann. 1778, N. 36, p. 281.
Linckvogel, in Hannov. Magazin. 1776, n. 28.
* Leese, Explanation of the Cause why Vaccination has sometimes failed, &c. p. 60.
* Lettsom's Observations on the Cow-Pock.
Loeber, (Christ.) Sendschreiben von dem Wiederkommen der Pocken nach geschehener Einimpfung, Erf. 1767. A. D. B. B. 12. 2. p. 253.
Macquart, in Journal de Médicine, T. VIII. p. 39.
* Maitland's Account of Inoculating the Small-Pox, 1722.
Mareschall de Rougeres, in Journal de Médicine, T. XXXIX. p. 240.
* Marescot de Variolis, p. 128.
Medicus et Petit, deux lettres sur les rechutes et la contagion de la petite verole. Mannh. 1767.
* Medical and Physical Journal, Vol. V. p. 403. Vol. XII. p. 318. Vol. XIV. p. 195, 256, 402, 404, 406, 436. Vol. XV. p. 454. This valuable work abounds with cases.
Meier, in Hannov. Magazin. 4, p. 1625. 5, p. 295.
Mercure de France, 1759, p. 143, 145, 154, 173, 175, 188. 1760, p. 143, 165, II. p. 170.
* Meza, Compend. Med. Pract. fasci. c. 1. c. 21, § 210.

variolous pustules on the body of the fœtus, capable of affording the genuine matter, and of communicating the disease to others by inoculation, while its mother has been unaffected,

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* Monro's Observations on the Different Kinds of Small-Pox, &c. Edinburgh, 1818. p. 77.
* Moore's History of Small-Pox, p. 279.
* ——— Reply to the Anti-Vaccinists, p. 55.
* Morton, De Febribus, p. 509. Hist. 65.
* Mosca, Dissertat. 2. Sul aria, p. 106.
Muller, in Baldinger N. Magazine, V. B. p. 107.
Mumssen, in Act. Reg. Soc. Med. Hafn. Vol. III. n. 3.
* Nicholai Patholog. 2 B. p. 285.
Nouvelliste œconomique et literaire, 1760. p. 131, 1761. p. 33.
Olivier, in Journal de Medicine, T. XI. p. 417.
Oswald, in Hufeland Journal der pract. Heilk. 14 B. 2 St. p. 191.
Pallas, Bemerkungen auf einer Reise in die sudlichen Statthalterschaften des russischen Reichs, 1 B. p. 153.
Paullini, Cent. 3. Obs. 27.
Penada, Osservazioni, etc. v. Weigel, Italien. Bibliotheck, 4 B. 1 St. p. 141, 142.
Pettit, Lettre sur quelques faits relatifs a la pratique de l'inoculation. Paris, 1767-8.
Quartalschrift fur altere Literatur und neue Lecture, 3 St. n. 6. p, 63.
* Ramsay, in Monro's Observations on Small-Pox, p. 150.
* Ring's Answer to Mosely, in various places.
* ———————— to Goldson, p. 15—41.
* ——— Treatise on Cow-Pock, 58, 260, 681, 684, &c. &c. &c.
* ——— In London Med. Repository, Vol. III. p. 204.
* ———— Medical and Surgical Journal, Vols. XII. XIV. XV. in various places. Between sixty and seventy cases have been collected by this gentleman, the whole of whose works I have not been able to consult.
* Reports of the Board of the National Vaccine Establishment to Parliament. Various years since its institution, and particularly for July 1811.
* Repository, London Medical, Vol. III. p. 37, 204.
De la Roberdiere, Lettre sur deux petites veroles avec recidives. Vienn. 1780. 8.
* Rosen, Maladies des Enfans, p. 250.
Rousille Chamseru in Recueil periodique, &c. T. XII. p. 165.
* Rowley the anti-vaccinist himself gives the case of Miss Lutwidge, in some of his works, which I cannot now lay my hand on. He thought the first disease had been cow-pock!!
Samml. medicinischer Wahrnehmungen, 8. B. p. 17.
N. Samml. medic. Wahrnehm. 1 B. p. 129, 148, 176.
Van de Sande in Verhandelingen de Socleteit in's Hage 2 Deel.
Sarcone in Epist. ad Hallerum, V.
* Sarcon. Istor de mali osservati in Napoli, p. 1. pag. 58.
* Sayers, in Correspondence of the Directors of the Cow-pock Institution Dublin, p 38.
* Simpson, in Correspondence of the Directors of the Cow-pock Institution Dublin, p. 38.
Stoll, Versuch einer medicinischen Beobachtungskunst, p. 178.

places the fact in a still stronger, and in an unquestionable point of view.*

I cannot dismiss this most important subject without submitting to your readers the following queries, which naturally spring from a consideration of the cases above detailed.

1. Do variola and varicella, when they happen to be contemporary diseases, modify each other?

2. When thus modified, are they capable of producing an anomalous disease, in the same way as a disease of that description was produced by Doctors Woodville and George Pearson, by vaccinating at the Small-pox Hospital in London?

3. If they do not modify each other, but remain distinct unmixed diseases, will one of them, variola for instance, attack one set of individuals in the same town, house, or family, while varicella attacks another set?

4. Does varicella ever occur epidemically without small-pox, and where are the records of such epidemics to be found?

5. Is there, in any of the cases above described, any peculiarity, either in the mode of attack, progress, or decline, which authorize us to call it a disease *sui generis?*

Lastly, Have the eruptive diseases, such as I have now described them, and as they have for some time past existed in the city of Edinburgh, any, and what connection, with the

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* Targioni, Avis. sopra la salut. uman, 1775, h. 17.

Thuessinck, in Museum der Heilkunde, 3 B. p. 189.

Tode, Medic. Chir. Bibl. 1 B. 2 St. p. 35.

Vieussens, Histoire des maladies internes, &c.

Vogel, N. Medic. Bibl. 6 B. p. 187.

* Vogel, Manual, Prax. Med. Tom. III. Cap. 1.

* Wagstaffe's Letter, showing the Danger and Uncertainty of Inoculating the Small-pox, 1722.

* Walsh, in Corresp. of the Directors of the Cow-pock Instit. Dublin, p. 45.

Weber, Observat. Med. Fascic. I. p. 17.

Werner, Diss. causa cur homines semel tantum variolis veris et morbillis corripiantur. Regiom. 1767.

Van der Weil, Cent. 2. Obs. 42.

* Willan on Vaccine Inoculation, p. 65, 71.

Willich, in Baldinger N. Magazin. X. B. p. 126.

Withers, in Memoirs of the Med. Soc. of London, Vol. IV. p. 186.

* Woodville, History of Inoculation, Vol. I. p. 217.

* ——— in Medical and Physical Journal, Vol XIV. p. 195.

Some few of the cases from periodical Journals are referred to under two letters. Those marked * are additions to Ploucquet's Catalogue, derived from Burserius, from Dr Bateman's paper, from the admirable articles in the Edinburgh Review, Vols. IX. and XV. and from other sources.

* Vide Jenner in Med. Chir. Trans. Vol. I. p. 271, and also the works of Mead and Mauriceau.

reigning epidemic fever? To assist, in the answer to this query, I would remark, that an industrious observer, Dr Rogers, in his Essay on Epidemic Diseases, Dublin, 1734, informs us, that a small-pox, of the most crude and worst kind, was constantly contemporary with a fever which he describes as raging epidemically in Ireland, upwards of a century ago, at three different periods, with a regular interval of ten years between each, viz. in the years 1708, 1718, and 1728, all which years were distinguished by cold and moist summers, and warm and moist winters. The symptoms of this fever bore a very close resemblance to that now raging in most parts of Scotland; and he describes the accompanying small-pox as presenting several anomalies and variations from the disease as it usually appears.

I cannot close this long paper more appropriately, than by employing the words of the National Vaccine Establishment in their report for July 1811. "It appears, from the present state of our information, that one person in three hundred dies from the inoculated small-pox, and that there is, perhaps, one failure in one thousand after vaccination. An individual who, under such circumstances, should prefer the inoculation of his children for the small-pox, to submitting them to vaccination, would be guilty of an improvidence similar to that of a parent who should choose for his son a military service, in which there was *one chance in three hundred of being killed*, in preference to a station where there was *only one chance in a thousand of being slightly wounded.*"

To this opinion, I beg to subjoin as a corollary, drawn from the whole of the evidence which I have now offered, as well as from that derived from the extensive experience of others in many parts of the globe, and from partial proofs in our own islands: THAT, BY AN UNIVERSAL ADOPTION OF, AND STEADY PERSEVERANCE IN, THE PRACTICE OF VACCINATION, THE RAVAGES OF SMALL-POX MAY BE EFFECTUALLY DIMINISHED, AND EVEN THE DISEASE ITSELF PERHAPS EXTERMINATED: AND THAT THIS EXTERMINATION, THE GREAT ULTIMATE OBJECT OF THE JENNERIAN PLAN, AFFECTS MUCH MORE NEARLY THAN HAS GENERALLY BEEN IMAGINED, EVEN THOSE WHO HAVE ALREADY UNDERGONE THE HORRORS OF SMALL-POX, OR WHO HAVE BEEN SUBJECTED TO ITS MILD BUT POWERFUL PREVENTIVE.

Believe me, my dear Sir, sincerely yours,

J. HENNEN.

Queensberry House,
August 24, 1818.

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