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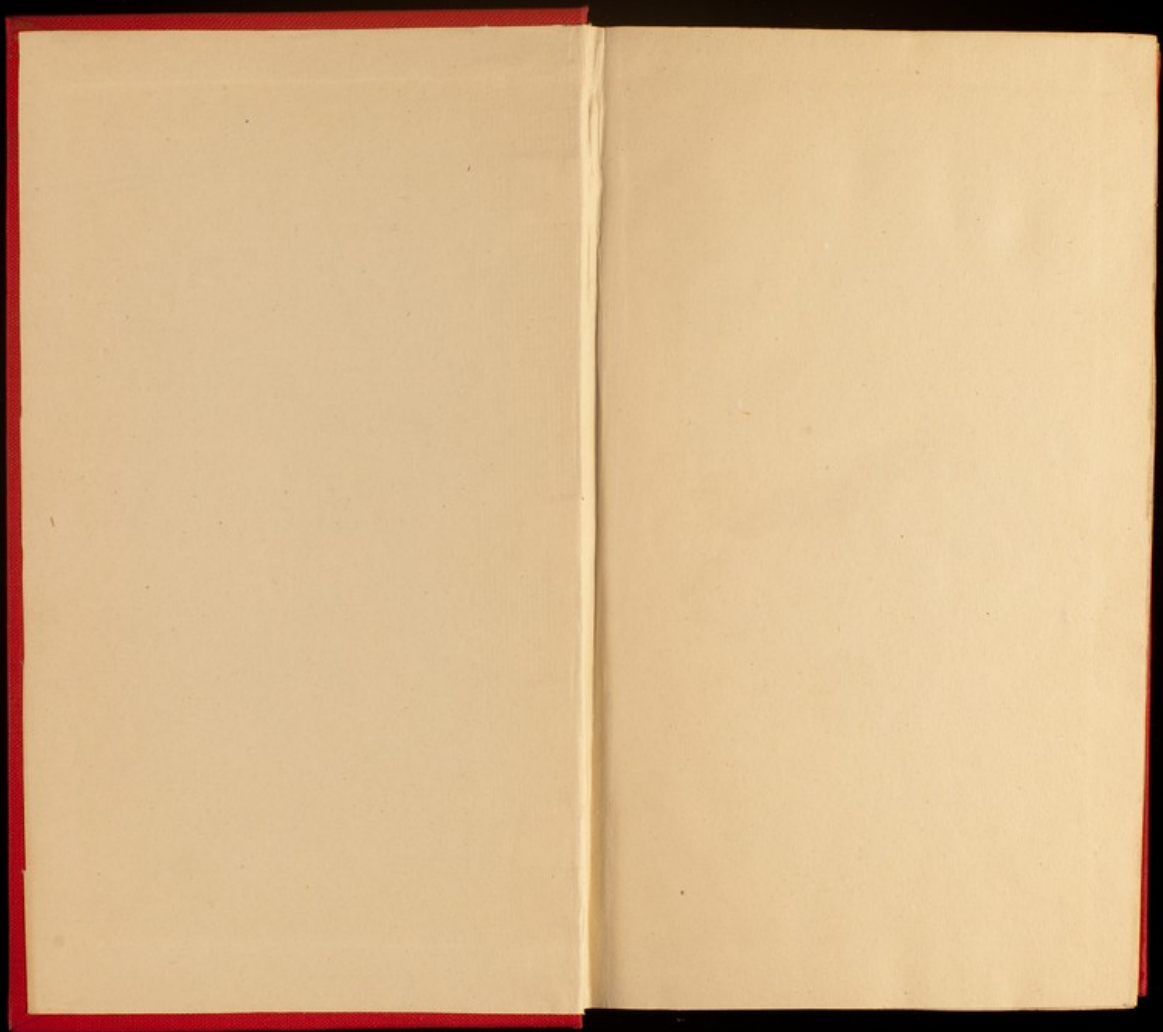
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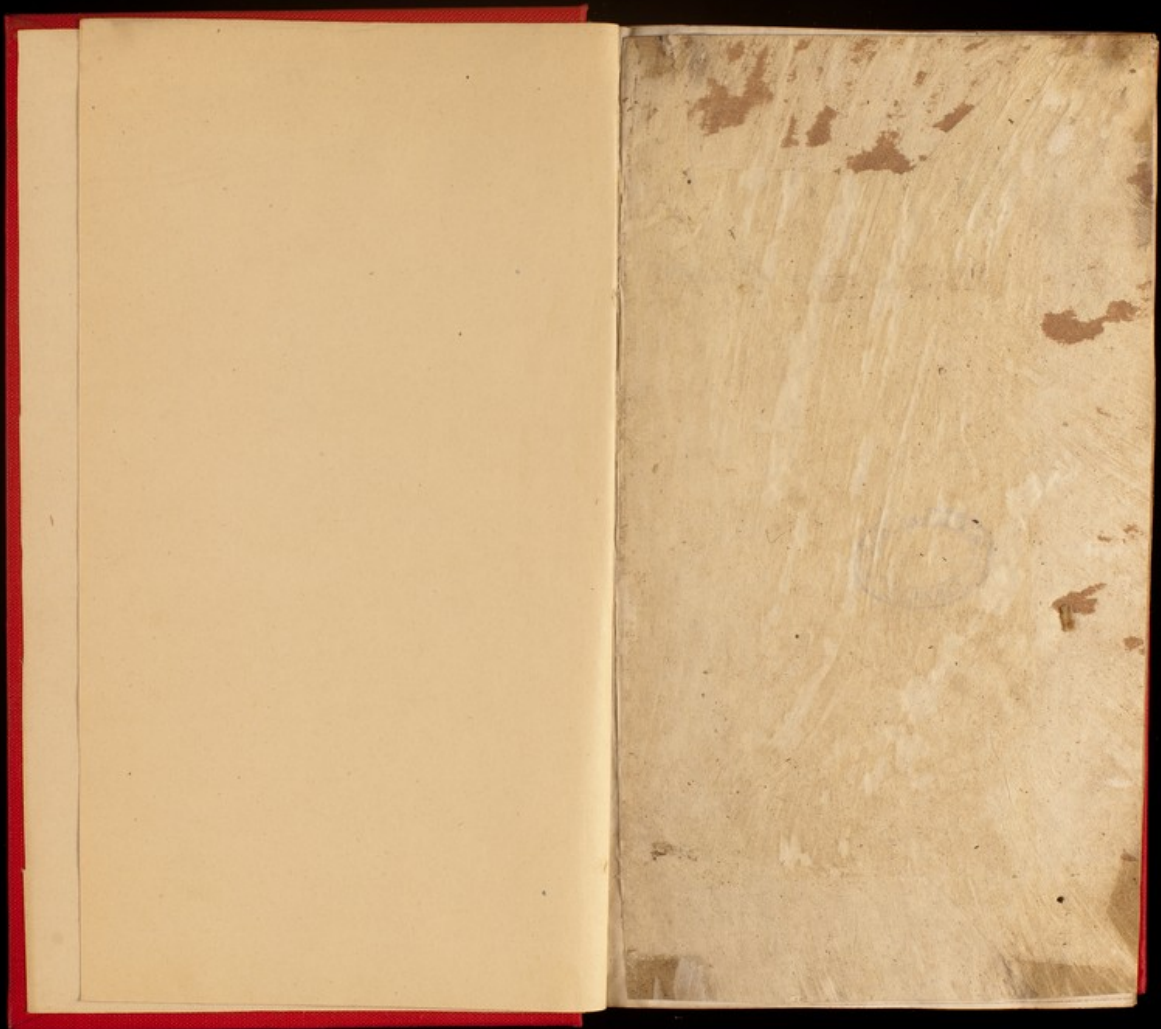
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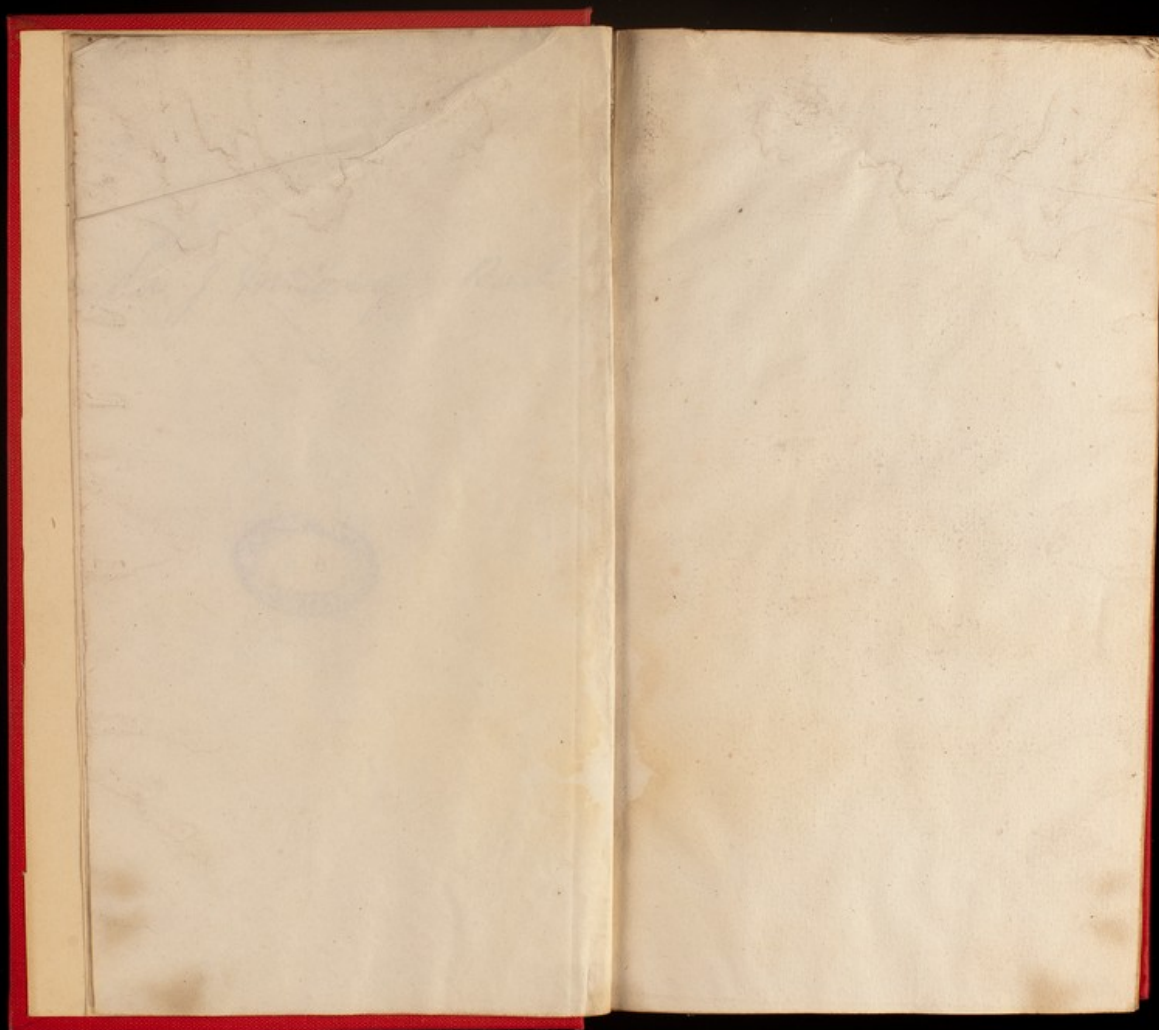
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c.
Sir, J. M. McGregor Bart.







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SURGICAL CASES

*For Sir James W. Spence
with the Author's permission*



OBSERVATIONS :

BY
RICHARD CARMICHAEL, M. R. I. A.

SURGEON OF THE RICHMOND HOSPITAL, HOUSE OF INDUSTRY, &c. &c.

FROM VOL. II. OF THE TRANSACTIONS OF THE KING'S AND QUEEN'S COLLEGE OF
PHYSICIANS IN IRELAND,

Dublin :

Printed by James Cumming & Co. at the Hibernia Press-Office,
FOR JOHN CUMMING, NO. 16, LOWER ORMOND QUAY.

1818.

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AN ACCOUNT
OF THE
EXTIRPATION
OF A
TUMOUR OF THE NECK,

ENGAGING THE PAROTID GLAND,

By RICHARD CARMICHAEL, M. R. I. A.

ONE OF THE SURGEONS OF THE RICHMOND HOSPITAL, HOUSE OF INDUSTRY,
&c. &c.

Read by Dr. Brooke, 1st June, 1818.

THE annexed engraving will afford, more clearly than any verbal description, a correct notion of the appearance and extent of a tumour of the neck and jaws, which I removed on the 14th of December, 1817. It was drawn by my pupil, Mr. Farrel, the day before the operation, who also took the following measurements of its external surface:—Vertically from the external ear, (which it pushed forcibly upwards out of its natural situa:

A

tion) to the neck on which it descended, it measured five inches—Horizontally, immediately below the ear at its superior part, three inches and a half; and at its inferior part, full five inches; so that it gradually increased in volume towards its lower termination. It was of a firm consistence, but not of that cartilaginous hardness which cancer, in this situation, usually possesses. It evidently adhered to the bones; but I thought it possible that it might be merely attached to the mastoid process, and to the angle of the inferior jaw bone, as it was very moveable on insinuating the fingers under the lowest and most projecting part. In this, however, as will appear in the subsequent account of the operation, my hopes were not realized; for it was found to be fixed to the transverse process of the first cervical vertebra, and to the bones which form the basis of the skull.

The patient, a respectable shopkeeper, residing in Parson's-town, was a man of temperate habits, about forty years of age. The tumour, according to his statement, was first observed about the size of a kidney-bean, lying below the ear, fourteen years previous to the operation. It increased slowly, and in four years had attained the size of an egg; at which time it was removed by an eminent practi-

tioner, who resides in the same town with the patient. The tumour, however, re-appeared shortly after the operation, and increased with greater rapidity than before.

About five or six years ago, I saw him, in consultation with surgeons Richards, Peile, and Colles; at this time, the tumour had extended considerably on the face; but had not arrived at one half of the dimensions I have stated above. The opinion of the consultation, at this period was, that there were grounds to believe that the parotid gland was engaged in the disease, and that we could not recur to operation with safety, or any prospect of success. Shortly afterwards, more in compliance with the solicitations of my patient than from any sanguine expectations of success, I applied a strong escharotic (the arseniate of iron) to the tumour, which destroyed a very considerable portion of the part that spread on the cheek, and which afterwards healed without difficulty. The tumour, however, notwithstanding the constant application of cold evaporating washes, continued gradually to increase, and was attended with occasional shooting pains.

In November, 1817, finding the tumour increase to an alarming extent, he again came to Dublin for

advice; and as operation, however perilous the attempt, presented the only chance of saving his life, I fairly laid before him the hazard as well as the hopes involved in this bold measure. As a favourable indication, I stated that the result of the trial which had been made with caustic, afforded a strong presumption, that the tumour was not of a cancerous or malignant nature; and, therefore, afforded a very different prospect of success, than if it were otherwise;—and I added, that the knowledge at which the profession had arrived, since the last consultation, with respect to the possibility of tying the carotid artery, in case of necessity, enabled us to obviate the dangers of hæmorrhage during the operation.

Having visited the country, for the purpose of consulting his friends on the propriety of the measure, and of settling his affairs, he returned with a determination to submit to the operation. This resolute temper of mind he maintained to the last, exerting, throughout, such a degree of intrepidity and coolness, as could alone have enabled me to prosecute the extirpation of a mass, such as I have described, situated in the midst of the most important veins, arteries, and nerves in the frame, and requiring my undivided attention for the space of an hour and upwards.

The patient was laid on a table, inclined to his left side, and Messrs. Peile, Colles, and Todd assisted me in the operation. I began, by making an incision the entire length of the tumour, commencing it immediately below the cartilage of the ear, and extending it beyond the inferior part of the tumour, along the internal edge of the sterno-mastoid muscle. The incision was carried considerably below the tumour, for the purpose of exposing the trunk of the common carotid, in order to admit either of compressing it, or of passing a ligature round it, in case such a measure should afterwards become necessary by the occurrence of any unmanageable hæmorrhage. While this object was pursued, two threads were passed round the external jugular, and the vein divided between them, in order to prevent any embarrassment, which *its* hæmorrhage might produce. The artery, as well as the mastoid muscle, were much displaced by the pressure of the tumour, which had pushed them closer to the trachea than their natural situation. However, as soon as it was deemed sufficiently exposed to admit of its circulation being commanded by the pressure of the fingers of an assistant, I proceeded to the other steps of the operation: these were first to dissect back the integuments at either side of the incision, so as to expose the external or superficial part of the tumour. It was then detached from

the meatus auditorius, and parts about the ear ; and also from the mastoid process behind, and from the angle of the jaw before, to which parts it firmly adhered.

I now made use of the handle of the scalpel and my fingers, to separate it from the deep-seated parts lying between the temporal bone, and ascending process of the lower jaw, where it was imbedded to a depth far beyond our expectation. This part of the operation was necessarily tedious, as considerable difficulty was experienced in detaching the tumour from its connexion with the surrounding parts.

A firm band or root, connected with the deepest part of the tumour, having a large artery distinctly beating upon its surface, was found to resist all my efforts to disengage it ; and it became absolutely necessary to have recourse to the knife. But previous to its division, I requested Mr. Todd to be prepared to compress the carotid trunk, in case of the occurrence of hæmorrhage. The band was then divided with a buttoned bistoury close to the tumour, with the view of avoiding the artery ; in this, however, I was disappointed. Instantly an alarming gush of blood, which evidently came from a large vessel, followed the division ; and the danger appeared the more imminent, as the pres-

sure which Mr. Todd applied with all the force he could exert upon the carotid trunk, was actually incapable of repressing the torrent. There was not a moment to be lost. Mr. Colles plunged a dry sponge to the bottom of the wound, and firmly pressed on the bleeding vessel, while I made a horizontal section of the tumour, till I arrived at the cavity occupied by the sponge, with the view of exposing as quickly as possible the mouth of the bleeding vessel. This was accomplished in sufficient time to save the patient's life ; and a large artery, which was probably the trunk of the facial or labial, was tied in two places ; that is, at each side of an orifice, resembling the vent of an organ-pipe made by the knife, not by dividing the artery, but by taking off a slice of its surface. When the ligatures were fixed, the pressure from the carotid was removed, and no farther hæmorrhage occurred.

I now had time to examine that portion of the tumour which remained, and found that it firmly adhered to the bones of the basis of the skull, and to the transverse process of the atlas. It was now proposed by some of the friends who so ably and anxiously assisted me, that we should proceed no farther, but leave this portion as it stood, without incurring the danger of another hæmorrhage ; but this advice, however prudent, I had the courage

to resist, being determined to make an effort to detach the remainder of the tumour, without the use of the knife.

I first proceeded to remove with the fingers that portion which was fixed to the temporal bone, between the mastoid and stiloïd processes. This was accomplished with some force and great pain to the patient, as the trunk of the portio dura of the seventh pair of nerves was separated with the diseased mass, a circumstance which was afterwards found to cause the paralysis of that side of the face. I next removed by the same means another portion, which was fixed to the transverse process of the atlas; still another small portion remained so firmly fixed to the bones at the basis of the skull, that it was deemed more prudent to pass a ligature around its base, than to make any farther attempts at its extirpation; and when this was accomplished, a piece of lint was wrapt round the portion included in the ligature, in order to prevent any after communication with the surrounding parts. The wound was now cleared of coagulated blood, and the edges brought together with straps of adhesive plaster, allowing the ligatures of the large artery already mentioned, as well as one or two smaller ones, together with those passed round the external jugular vein, and the portion of the tumour, to hang out of the

wound. Notwithstanding the magnitude of this operation, the loss of blood which he had sustained, and the pain which he had endured with so much fortitude as not even to allow a murmur to escape him, this strong-minded individual walked from the operation table to his bed in an adjoining room, declining every kind of assistance which the pupils present were anxious to afford him.

Immediately after this protracted effort of magnanimity, Mr. Fitzpatrick (for it would be unjust to withhold his name) suffered some alarming symptoms. He became chilly and cold, but at length his heat was sufficiently restored by warm drinks, and jars of hot water placed at his feet: he also took an anodyne draught. In the evening there was a considerable oozing of blood, but a continued pressure for two hours with the hand at last stopped it. He complained of considerable pain and difficulty of swallowing; a second draught was directed.

2nd day. He appeared as well as could in reason be hoped for; pulse 86, excessive thirst; great pain in his throat, attended with considerable difficulty of swallowing. His bowels were freed during the day by means of cathartic pills, and injections.

3rd day. He appeared to be going on well, but did not sleep during the night; pulse 104; the medicine had operated well. Chicken-broth was allowed him during the day; and at night he took a draught containing forty drops of tinct. of opium.

4th day. The draught had not the intended effect. He could not sleep, yet did not complain of pain; pulse 98. His eye and general cast of countenance were good; his bowels were freed with injections, and he took during the day an increased quantity of chicken-broth, and in the evening the anodyne draught was repeated.

5th day. I found him muttering and delirious, but on questions being distinctly asked him, he answered rationally. The nurse reported that he had been raving during the entire night, and anxious to rise from his bed; his pulse were 100 but weak. Conceiving that this delirium was owing to that state of the brain which is induced by loss of blood, and want of rest, I did not hesitate to give him wine and strong broth for his support.

On this day I removed the dressings. The wound at the upper part, about the length of an inch, where the integuments had been thin and adhered

to the tumour, appeared black and sloughing; but adhesion had taken place through the remainder of its extent. The right side of his head and scalp were considerably swollen, and the eye nearly closed.

6th day. He had scarcely any remains of delirium. His manner was, however, quick and unnatural; pulse 90 and firmer. The preceding night had afforded him the only sleep he enjoyed since the operation, and he took a couple of glasses of sherry in his whey during the night. Had an opposite course been pursued, as a recurrence to blood-letting and cathartics, under a suspicion that the delirium was dependant on the inflammation of the wound extending to the brain in its vicinity, I have no doubt that it would have been attended with the worst consequences; and so enfeebled was the condition of this man, and so reduced his powers, that I am persuaded he would have fallen a victim to the slightest depletion.

7th day. He was perfectly calm and collected in his mind; his pulse 90 and firm. He slept well during the preceding night, and did not now complain of any pain in swallowing. The discharge from the wound was more abundant but still of a serous nature.

8th, 9th, 10th, and 11th, days. The ligatures came away, and also the piece of slough or dis-

eased substance which was included in a ligature. The discharge had become purulent; the swelling of his face and scalp was dispersed, and his strength was daily improving. His recovery was now decided; but the wound was not healed until the 20th of January, thirty-six days from the time of the operation. There was no hardness or any appearance of a suspicious nature.

The muscles, however, of the side of his face, where the tumour had been, were paralyzed, in consequence, as already remarked, of the division of the trunk of the *portio dura* of the seventh pair of nerves. This affection, I was happy to observe in the following June, was considerably lessened; and there is therefore every expectation that, as the inosculating nerves increase in size and strength, the slight deformity which it occasions, will totally disappear. The cicatrix of the wound was reduced to a mere line, and there was not the slightest indication of any diseased action going forward in the part.

The success of this operation proves the possibility of extirpating the parotid gland, if circumstances should point out the propriety of such a measure. If, however, I should be again called upon to perform, in another, the same formidable operation, I would in the first instance, pass a

ligature under the carotid trunk, which might be tightened or not, as occasion should require. This previous step had been my intention in the present instance; but from which I was dissuaded by some of my judicious and experienced assistants; however it is apparent that by not adhering more strictly to a well considered opinion, I was very near finding ample cause for repentance.

OBSERVATIONS
ON
VARIX AND VENOUS
INFLAMMATION;

WITH INSTRUCTIONS FOR OPERATING WITH SAFETY TO THE
FEMORAL VEIN

IN POPLITEAL ANEURISM.

BY
RICHARD CARMICHAEL, M. R. I. A.

ONE OF THE SURGEONS OF THE RICHMOND HOSPITAL, HOUSE OF INDUSTRY;
&c. &c.

Read by Dr. Brooke, 7th of September, 1818.

FIVE or six years ago, a case of venous inflammation occurred under my care, after the operation of tying the saphena vein, on account of a varicose state of the vessels of the leg, and an ulcer situated above the inner angle. The notes I then took have unfortunately been lost; but the case made so strong an impression upon me, that the following circumstances are fresh in my memory. The patient, a stout young man, was an intern of the Richmond Surgical Hospital. A few days after the vein was tied in the manner recommend-

ed by Sir E. Home, he became uneasy and restless, complained of oppressed breathing, and had a rapid pulse, furred tongue, great thirst, flushed countenance, and also tenderness and swelling of the thigh. These symptoms were followed in a few days by strong rigors, frequent sighing, and a sense of weight about the præcordia. On the accession of these complaints, the ligature round the vein was immediately cut away; and recourse was afterwards had to repeated venæsection, purgatives, antimonials, fomentations of the limb, and all those means calculated to lessen general as well as local excitement. Notwithstanding these measures were pursued with activity, the disturbance of his system increased, and the limb became more swollen.

The cerebral functions were also engaged, as evinced by occasional incoherency and delirium. In these, as well as in his other symptoms, the disease, in eight or ten days from its commencement, assumed very much the character of a typhus fever. New and unlooked for appearances now took place; four or five tumours formed on different parts of his body—on his hips, shoulders and breast, which quickly suppurated—some of these I punctured as soon as a fluctuation was evident, and the integuments discoloured. About an ounce or an ounce and a half of healthy looking

matter was discharged from each tumour; but it was fetid, and attended at the same time with a disengagement of some very offensive gas, which bubbled through the matter. This extraordinary circumstance I simply detail as it occurred, without pretending to account for it.

These suppurations were not, however, attended with any relief of his symptoms; the fever, thirst, and general uneasiness still continued; the limb became enormously swollen without evincing any sign of suppuration, and he sunk so fast as to leave no hope of his recovery. At this juncture, his friends insisted upon taking him to the country, and in all probability he died on the road. Indeed the event appeared to me to be so inevitable, that I regretted an interference which prevented the examination of the body.

Mr. HUNTER was the first to call the attention of the profession to the occurrence of inflammation of the veins, which he attributes chiefly to inattention in closing the orifice of a vein after phlebotomy. Before the publication of his observations on the subject,* the untoward symptoms, which sometimes occurred after venæsection, were

* See Transactions of a Society for the improvement of Medical and Surgical Knowledge,—page 18, vol. I.

in general attributed to a wound of the tendon of the biceps muscle. His view of the subject, however, deserves more attention than it seems to have received. Inflammation of the veins, like inflammation elsewhere, will have its degrees. It may only produce a slight thickening of the coats of the vessel, and of the cellular membrane around the injured part; or it may extend along the vein in both directions exciting the deposition of coagulable lymph, and the final obliteration of its cavity by the adhesion of its sides. But if the inflammation exists in a still higher degree, the internal coat of the vessel will undergo a change to adapt it to the secretion of pus, which, according as it is formed, will, of necessity, mingle with the general mass of blood, except as is sometimes the case, the cavity of the vein is obstructed at different intervals, by the adhesion of its sides, when a chain of abscesses will in consequence form along the course of the vessel.

These abscesses, however, had not formed in the instance I have mentioned, nor in that which I shall presently detail. In both of them it is probable that the great disturbance of the system, and the peculiar typhoid character of the symptoms, may have been owing to the admixture of pus with the general mass of blood.

The only case I have met with in print, which

bears any resemblance to that I have just detailed, is one related by Mr. Hodgson in his valuable work on diseases of the arteries and veins. In this case * the inflammation succeeded venæsection in the arm; and after the usual febrile symptoms, "a painful swelling was observed above the clavicle, and in a few days afterwards, another soft diffused swelling was discovered underneath the angle of the lower jaw." It does not, however, appear that those tumours suppurred. On examination, *post mortem*, among other morbid appearances, it was noticed that the cephalic vein, which had been the one injured, was obliterated as far as the shoulder—that the internal jugular, subclavian, axillary and brachial veins were enlarged and thickened; and also that the external jugular, and subclavian veins were filled with pus. The diseased appearances were not gradually lost, but terminated abruptly. The heart was healthy.

Notwithstanding the slight attention which has been given to the subject, I am confident that inflammation of the veins is an occurrence much more frequent than is generally imagined; and that many lives are annually lost from this cause alone, even where its existence has not been suspected. Now that blood-letting is so generally

* Case XLIX—page, 512.

practised in every description of fever, it is incumbent upon practitioners to be aware that a train of symptoms, strongly resembling those of typhus, may arise from venous inflammation, and from which it is difficult to distinguish it, except indeed the inflammation of the orifice and the pain and tenderness along the course of the vessel may lead to a true diagnosis. In extensive wounds or surgical operations, I believe it to be a still more common but unheeded cause of death, and the following case will afford a convincing elucidation of this remark.

CASE II.

James Boyle, æt. 40, was admitted into the Richmond Hospital, on the 20th of May, 1818, on account of a large popliteal aneurism on the right side. On the 25th, I tied the femoral artery immediately above the part where it passes under the sartorius muscle. A silk ligature of two threads was employed, and the ends were cut close to the knot, according to the method recommended by Mr. Lawrence. Nothing particularly worthy of notice occurred during the operation; the artery was fully exposed in a few seconds from the time of its commencement; but some little force was required to pass the aneurismal needle, armed with the ligature, under the artery; and as soon as it was accomplished a gush

of venous blood followed, which in a second or two spontaneously ceased. When the ligature was tightened, the pulsation in the tumour of the ham, which before was strong and manifest, immediately ceased, and a diminution in its volume was even obvious to the eye. After the operation, the patient complained of numbness in the foot, but in every other respect was totally free from uneasiness of any kind. On the day after the operation his pulse was but 75, and the temperature of the affected limb was the same as the other.

On the 3d day, the dressings were removed, and it was found that the wound had apparently healed by the first intention. But on the 5th day a small quantity of pus flowed through an opening in the lower part of the cicatrix. He now began to feel some general uneasiness; his pulse the following day rose to 90, which since the operation had not exceeded 75. His sleep was disturbed, and his countenance flushed, but he could not point out the particular cause of his uneasiness. Conceiving that an abscess had formed about the ligature, I broke down with the probe the new formed cicatrix, but very little additional matter was discharged.

June the 7th—The thirteenth day from the operation, he had several distinct rigors, followed by increased heat; the discharge from the

wound, which was of a healthy appearance, had augmented in quantity; and the lower part of the leg had become cedematous. He sighed, or rather moaned, frequently, but was still at a loss to point out any seat of the pain; and he had that listlessness of manner and countenance usually observed in the second or third week of typhus fever.

On the 8th, he had a strong rigor, which continued 15 minutes, and on the 9th, he had three distinct rigors, each followed by a profuse perspiration. His face and neck were in general of a deep red colour, covered with a clammy perspiration; his manner evinced great torpor and debility, and at times he muttered incoherently to himself; pulse 90; tongue brown; the cedema had extended to his knee. Six ounces of blood were taken from his arm, which exhibiting the buffy coat, induced me to extend the depletion to twelve ounces more on the same day. He was also directed a calomel bolus with a cathartic mixture.

10th.—There were no signs of amendment; ten ounces of blood were taken from the arm which also exhibited the buffy appearance. The discharge had rather increased, but there was no lodgement of matter; the entire limb was now swollen and cedematous.

11th.—He was evidently worse; his pulse up-

wards of 100; tongue brown and dry; respiration oppressed and laborious. In the evening he was affected with hiccough, and had another rigor, after which his face, which was hitherto of a deep red, became pale and ghastly, and he was delirious during the night. Wine was now given to him.

12th.—He was decidedly sinking; pulse 130; the integuments in the ham, covering the tumor, were livid and mortified. I made an opening into them, and set free a quantity of putrid coagulum, the contents of the sac. On the morning of the 13th, he died.

Examination.

On removing the integuments in the neighbourhood of the wound, it was ascertained that the discharge of matter had proceeded from a small abscess immediately behind, and adjoining the inner or pubal side of that part of the artery where the ligature had been applied. The ligature was found firmly fixed to the artery; and immediately above it, on slitting the artery open, a firm conical portion of lymph, mixed with coagula of blood about half an inch in length, evidently organized, was found to fill up the vessel; so that, as far as the process of union in the artery was concerned, nothing could be more satisfactory. We next

proceeded to examine the aneurismal sac, the surface of which was found dark and sloughy, and capable of containing about four ounces of fluid. The artery was evidently ruptured for about an inch in extent: two thirds of the arterial cylinder were deficient, while the remaining third (that which lay next the bone) connected those parts of the artery which continued entire, both above and below the sac; and there was no appearance which could induce us to suppose that the latter was formed by the dilatation of the coats of the vessel. So far in the dissection there was nothing ascertained to explain the symptoms which occurred after operation, or account for the death of the patient; but these were sufficiently explained on an examination of the veins. It was found that the crural vein, lying behind, and in close contact with the artery where the operation had been performed, had been wounded by the needle, a circumstance which accounts for the gush of venous blood which took place during the operation, on passing the aneurismal needle under the artery; yet no portion of the vein was included in the ligature. On slitting it open, its interior surface was found lined with pus and organized lymph, exhibiting the appearance which membranes present in a suppurating state. This appearance extended downwards almost to the ham, where it suddenly ceased, but the vein was rendered impervious at this part by a deposition

of coagulable lymph. The disease also extended a considerable way down the saphena; upwards I traced it as far as the common iliac vein, but I could not proceed farther, as the friends of the deceased were waiting for the body, and I had been under the necessity of promising them that I should only examine the limb; but it is probable that the inflammation extended to the cava, and perhaps to the heart. The diseased parts are preserved among the morbid anatomical preparations of the Richmond Hospital.

It is almost needless to enlarge upon the points in which this case affords a useful lesson. In so far as the artery is concerned, it proves that the small ligature recommended by Mr. Laurence, and the removal of its ends close to the knot, is sufficient to produce adhesion of the sides of the artery, and at the same time does not prevent the healing of the wound by the first intention, a circumstance which must obviate in a great measure much of the danger attendant upon this operation. 2d. It evinces the necessity of avoiding the vein. In the present instance, the artery was fully exposed before the ligature was passed; and when resistance was felt to the passage of the needle, I conceived that it was owing to the dense cellular membrane surrounding the artery; but whoever examines with attention the close contact, nay, adhesion of the femoral vein to the

artery from the tendon of the triceps almost to Poupart's ligament, will be convinced of the great difficulty of passing a ligature around the latter without wounding the former. This circumstance cannot but be of frequent occurrence, although in every instance, venous inflammation may not be the consequence. Some months ago a man underwent the operation for popliteal aneurism in the Meath-street Hospital. Secondary hemorrhage ensued, and the patient died.

The gentleman who performed the operation, an expert and able anatomist, informed me that on examination, it was ascertained that the ligature had passed through the vein, and that its coats were found in a suppurating and sloughing state, the extent of an inch or two above and below the wound; but the artery was also in a sloughing state, and it was obvious that an immediate communication had taken place between the two vessels so as to create a true varicose aneurism. As union had not occurred between the sides of the artery, we cannot attribute the fatal event to so small an extent of inflammation as that stated to have taken place in the vein; the case, however, cannot fail to be useful by evincing how liable this vessel is to be wounded, although the greatest care may have been employed in the act of passing the aneurismal needle under the artery. It is true a large vein may be wounded with impunity, but this affords no sound argument against

our adopting every adequate precaution to avoid an accident, which as we have seen, has caused at least one death, and for aught we know to the contrary, others beyond number.

The only part of the thigh from Poupart's ligament to the tendon of the triceps, in which the femoral vein is not completely covered by the artery, lies within the space which extends from Poupart's ligament to where the artery meets the sartorius muscle. At that part of this space most distinct from Poupart's ligament, the vein begins to disclose itself at the pubal side of the artery, from beneath which it emerges more and more as it ascends. This is the spot now generally chosen for the operation, on account of the superficial situation of the artery, which enables us to feel its pulsations before the skin is divided; but it is also the most advantageous part for tying the ligature, on account of the natural exposure of the vein and the consequent facility this circumstance affords for avoiding that vessel, for the actual view will enable the operator to pass the needle between the two vessels without wounding either, or disturbing them from their natural situation. This of course will be more easily done by introducing the needle on the pubal side of the artery, where the vein presents itself to view, and may therefore easily and safely be passed between

them when they are sufficiently exposed by previous dissection.

The close proximity and connexion of the vein with the artery, and the danger of including the former in the ligature, did not of course escape the attention of the many experienced surgeons who have written on the subject; but the easy and safe mode of accomplishing this object, which I have just pointed out, has not, I believe, been noticed by any. The following are Mr. Hodgson's directions on this part of the operation: "The coats of the artery being fairly exposed, the ligature is to be passed round it with a common aneurismal needle, the point of which is to be kept in close contact with the artery, so as to avoid including the femoral vein, or the branches of the anterior crural plexus."^{*}

From the fatal termination of the cases which I have detailed, and from numerous trials I have made on the dead subject, I can assert with confidence that Mr. Hodgson's directions do not afford us a sufficient security against inflicting an injury on the vein: for if we pass the needle from the external or ilial side of the artery, we cannot be certain that the vein is not included in the ligature, or that it will not be wounded by the needle, while

* P. 457.

passing under the artery; but on the other hand, if we pass it from the internal or pubal side where the vein emerges from beneath the artery, and where the needle can obviously be insinuated between the vessels, no danger can arise of injuring the vein—a material object, which may thus be accomplished without disturbing the artery from its bed, or treating it with that unnecessary degree of violence which is involved in the following directions of Professor Scarpa: "With the point of the fore finger of the left hand already touching the femoral artery, the surgeon will separate this artery from the cellular substance which ties it laterally and posteriorly to the contiguous muscles: making the point of the same finger pass gradually under and behind the superficial femoral artery, supposing that the surgeon has not enormously large fingers, he will raise it alone from the bottom of the wound, or, where it cannot be avoided, along with the great femoral vein. If it is along with the femoral vein, *holding the artery and vein thus raised and almost without the wound*, the surgeon with a bistoury or spatula, or simply with the fingers of his right hand, will cautiously separate the vein from the artery, only in the space corresponding to the point of the finger which supports the artery. He will then pass behind the denuded raised artery a large-eyed crooked needle with a blunt point, carrying in the eye near

them when they are sufficiently exposed by previous dissection.

The close proximity and connexion of the vein with the artery, and the danger of including the former in the ligature, did not of course escape the attention of the many experienced surgeons who have written on the subject; but the easy and safe mode of accomplishing this object, which I have just pointed out, has not, I believe, been noticed by any. The following are Mr. Hodgson's directions on this part of the operation: "The coats of the artery being fairly exposed, the ligature is to be passed round it with a common aneurismal needle, the point of which is to be kept in close contact with the artery, so as to avoid including the femoral vein, or the branches of the anterior crural plexus."^{*}

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to the point two waxed ligatures, each composed of six threads.†

With respect to the first part of these directions, that in which we are desired to separate with the fore finger the artery from the vein, while they are lying in their natural situation, I altogether deny the possibility of profiting by this suggestion; so close is the connexion that exists between these two vessels, that handling them in the manner described would considerably endanger their safety; and with respect to the second part of his advice, that in which we are desired to raise in our fingers the artery and vein almost *without the wound* for the purpose of separating them with a bistoury or spatula, I need not point out to the enlightened practitioners of these countries the danger attendant upon that degree of violence, which must be necessary to drag the artery and vein from their natural situation almost out of the wound. But if it shall be found that the mode I propose will enable the surgeon to pass the ligature round the artery without disturbing it from its situation or injuring the vein, it must necessarily follow that the operation for popliteal aneurism will in a great measure lose the formidable character with which it is at present invested. For the frequent fatal terminations of this operation under the most promising circumstances hi-

† Scarpa on Aneurism, translated by Wishart, p. 266.

therto so difficult to explain, has been a great drawback on the eclat attending the rapid improvement of British surgery in the treatment of aneurism.

In corpulent persons it is not always easy to discover the course of the artery by its pulsations; it would therefore be eligible to have some positive rules by which we may ascertain with precision not only the line of the artery, but also the exact spot at which the vein begins to emerge from beneath it, which is the place for performing the operation.

In a middle sized man the vein begins to emerge from under the artery, at five fingers breadth or three inches beneath a transverse line, ranging with the upper edge of the symphysis pubis,* and is fully exposed at four fingers breadth or two inches and a half below this line, to admit of being laid bare by dissection, so as to enable the operator to pass the needle with ease and safety between the two vessels; this spot lies considerably below the origin of the profunda, and the junc-

* In order that our measurements should be correct and undeviating, they should be made from a fixed point, such as is afforded by the os pubis; and not from an indistinct line, whose position varies whenever the thigh is bent or extended, which is the case with respect to Poupart's ligament.

tion of the saphena with the femoral vein; the latter after this junction, completely emerges from under the artery, on the pubal side of which, it lies in the same plane, until both vessels are concealed from our view by Poupart's ligament.

If the pulsation of the artery is not so obvious as to direct us where to make our incision, we may err in approaching too near the pubis, and thus, (independent of other consequences) embarrass the subsequent steps of the operation, by opening the saphena vein; but this may be avoided by measuring the distance between the symphysis pubis, and the most anterior point of the spinous process of the ileum. In middle sized male subjects this measurement usually gives five inches and a half, and in females half an inch or an inch more, one half of this measurement then brought to a transverse line from the upper edge of the symphysis pubis, will give the exact situation of the ilial side of the artery, at the place where the ligature is to be passed, which is at two inches and a half, or at the most three inches from this point along the groin towards the knee. In cutting down upon this spot, we come upon the pubal edge of the sartorius, where that muscle meets the artery, and here we have a strong dense fascia, (the fascia lata) extending from the muscle over the vessels, but it is considerably more dense over the latter; this fascia may be

divided with safety on the sartorius, and by pursuing the dissection of it, we expose first the artery, and then the vein; and when the vessels are thus sufficiently exposed, we may insinuate between them with ease the aneurismal needle, which is to be pushed under and close to the artery, without disturbing it from its bed; when the point of the needle appears at the opposite (the ilial) side of the artery, we must satisfy ourselves before we force it through, if we meet with any obstruction, that it is merely produced by cellular membrane, and is not occasioned by either the vein, or a branch of the crural nerve (saphenus) which is usually found lying in contact with the ilial side of the artery, and which is therefore in great danger of being injured, or included in the ligature.

It may possibly be said that the precautions I have dwelt on, will not be requisite to an expert operator, but to this I can only reply, that although I do not take upon me to appreciate the extent of any man's dexterity, yet I can confidently assert that the needle cannot be passed under the artery, even in the dead subject in any other spot, or in any other manner than those I have proposed, without the greatest danger of inflicting a wound on the vein or interfering with the profunda artery; unless indeed the operator shall previously separate the vein from the back

of the artery, (as recommended by Scarpa,) but to which it is so firmly attached, that the cutting edge only, and not the handle of the knife or fingers can effect it, and few I believe would have the rashness to use the knife in this situation.

Several instances recur to my recollection, of patients sinking under amputations, after having exhibited a train of symptoms similar to those detailed in the last case; but at the time not suspecting any affection of the veins, I did not examine into their state after the death of the patients. I am however persuaded, that this circumstance is a frequent cause of such deaths as follow amputations, and other extensive wounds, and I shall illustrate this observation by the following case for which I am indebted to my friend Mr. Read of Mercer's Hospital.*

* When this paper was going to press, I met with the following passage in Mr. Hennen's valuable observations on Military Surgery, concerning the various causes of death after amputation. "In some cases the veins, in others the arteries, and in others again both the veins and arteries, will be found inflamed, from the point of the stump to the very auricle and ventricle; and in many parts either lined with coagulable lymph, or filled with purulent matter to various distances. In the dissections conducted by Messrs. Dobson, Bingham and Crofton, after the battle of Waterloo, we met with no less than twelve cases where the veins were inflamed, and where at the same time purulent matter was found in the arteries with a considerable thickening of their coats."

This passage, among numerous other instances, demonstrates

CASE III.

"Elizabeth Mitchell, aged 40, was received into Mercer's hospital 28th Jan. 1818, for a compound dislocation of the ankle joint, which accident had happened the preceding evening. She refused to submit to amputation on the day of her admission; suffice it to say, that extensive mortification nearly to the knee was the consequence.

When the suppurative line had fairly formed, amputation was again urged and consented to. During the period of the sympathetic fever, there was great disturbance of all the digestive organs; frequent vomitings; more than ordinary yellowness of the skin and eyes; the vesications that arose on the limb were filled with an orange coloured serum. On the 17th day after the accident, I amputated above the knee, making a flap of the extensor muscles, and tying the vessels with silk twist ligatures as Mr. Laurence proposes. Nothing extraordinary occurred in the operation, and

the advantages, which the surgical art is likely to derive from the extensive opportunities for observation so long afforded to our military surgeons, and which could scarcely be neglected under the present most intelligent and admirable system with which the army medical department is conducted. If I had sooner perused this work, it is probable I should have curtailed many of the observations in this paper as unnecessary.

the muscles appeared healthy, but the integuments were slightly cedematous. Matters went on well until the morning of the 5th day, (and partial adhesions of the flap had taken place) when I was informed she had passed a very bad night.

February 18, from Case Book I make the following extract:—

Pulse 114, small and easily compressible; skin dry; heat less than natural; the yellow suffusion which had in some degree subsided, assumed a deeper tinge; the tongue covered with brown fur; did not complain of thirst; had vomited in the night; complained of great depression and sense of sinking about the præcordia; sighed frequently; a thin and foetid discharge from the stump, but small in quantity; did not complain of any pain in the stump, except what arose from changing the dressings.

20th.—This morning she had a long and violent rigor. On examining the stump, we found all the new adhesions had given way; the discharge like the day before, but in increased quantity; the limb though more swollen, had the cedematous character; pressure on any part above the face of the stump produced no pain.

I have no further note during her life, but re-

collect she had frequent severe rigors. I could not at the time trace them to any satisfactory cause, by any examination I made either of the stump, or with a view to discover if any of the solid viscera were engaged. She died the 14th day after the operation."

Dissection.

"The surface of the stump beneath the integuments had gangrened, and a large clot of blood adhered to it; the artery was uninjured, though the cellular membrane surrounding it for some distance was gangrenous; a conical clot of coagulable lymph filled it of about an inch and a half in length; the vein on being split up was found full of pus, nearly as high as Poupart's ligament; above this, it was covered with irregular patches of coagulable lymph like a soft membrane. On scraping this off, the vein appeared very vascular, which appearance was continued as far as its junction with the corresponding iliac to form the cava; which last was not inflamed. The liver was sound, and the gall bladder loaded with a dark viscid bile. Her friends being anxious to remove the body I could not examine farther."

In the three preceding cases of inflammation of the veins, we find that the disease was marked by strong rigors, great oppression and a sense of ex-

treme debility and weight about the præcordia; these symptoms were, no doubt, owing to the formation of matter, and the influence which it must produce on the general system when mixed with the mass of blood. In this stage of the disease, it is more than probable that it would be too late to adopt with any advantage blood-letting, and the other means calculated to lessen inflammation. In fact, if pus has been already formed and mixed with the blood, it is probably no longer in the power of art to remedy the evil, and the patient can only be left to his fate. But, if after an operation or extensive wound, we should find that in four, five, or six days, the patient who previously was going on well, becomes restless and uneasy with frequent sighing, attended with a quick pulse and flushed countenance; and if at the same time, the wound presents no appearance that can account for these symptoms, we may reasonably suspect the accession of venous inflammation. In this stage of the disorder, we should, therefore, I conceive, resort to the most active blood-letting, cathartics, abundant dilution, and other means calculated to resist the increase of inflammation, and its consequent tendency to the formation of pus. If by these measures, the progress of the inflammation is so far restrained, that no other injury occurs but the deposition of coagulable lymph, and the obliteration of the affected vein, we save the life of the patient. But there can be

little expectation of this favourable event, if rigors have already denoted the formation of matter.

It is scarcely necessary to state that after the occurrence of the first case detailed in this paper, I never ventured upon the general practice of tying the vena saphena on account of a varicose state of the veins of the leg; and, until Mr. Brodie's proposition of dividing the branches instead of the trunk was communicated to the public, I contented myself with merely recommending the use of the laced stocking, or the application of the roller, with a view to palliate rather than cure the complaint. But this, I acknowledge, was altogether unavailing among those who are its most numerous victims, the labouring poor. For the laced stocking can only be procured at an expense beyond their means; and few of the lower orders of this or any other country, could be prevailed on to take the trouble of daily applying a long roller with the necessary exactness.

I lost no time, however, in availing myself of Mr. Brodie's operation as soon as it became known to me. His reasons for supposing that an equal danger does not attend a wound of the branches, as an injury of the trunk appeared to me very convincing, and the successful instances he details of his practice left no doubt of its value.

As I do not find that his operation has been noticed in any succeeding publication, it is apparent that it has not received the attention it so highly merits; and I conceive it will be useful to the public, as well as doing justice to that distinguished surgeon, to whom the profession is already so deeply indebted, to state the cases in which I tried the mode he recommends, and with these cases, which I shall detail in the briefest manner possible, I shall conclude the present paper, which has already extended far beyond my calculation.

CASE IV.

Callaghan Mc. Carty was admitted November 13th, 1816, into the Richmond Hospital, on account of a varicose state of the veins of both legs. The right leg was selected for operation, as its veins were more enlarged than those of the other, and to an extent that I had never witnessed in any instance whatever; there were also on this leg several superficial ulcers, which must have been connected with the veins, as the patient stated that they frequently bled to an alarming extent; he also mentioned that the pain arising from standing was so great that he was obliged to discontinue his trade as a carpenter.

I selected for operation three groups of veins

which were particularly large and painful upon pressure; they were situated about a hand's breadth below the knee, one on each side, and one in front of the leg.—The instrument employed was made according to Mr. Brodie's directions—a curved sharp-pointed knife, with the cutting edge on the convex side.* The patient complained of considerable pain at the division of each cluster of veins, which subsided in about an hour after the operation. The hemorrhage was immediately stopped by compress and bandage.

15th. The bandages were removed, and it was found that two of the openings had healed.

22nd. The third opening had also cicatrized and all the varicose veins, with the exception of one

* It will be satisfactory to those who have not Mr. Brodie's paper by them, to give the following extract from it, which contains brief and clear directions for using this instrument. "Having ascertained the precise situation of the vein, or cluster of veins, from which the distress of the patient appears principally to arise, I introduce the point of the bistoury through the skin on one side of the varix, and pass it on between the skin and the vein, with one of the flat surfaces turned forwards, and the other backwards, until it reaches the opposite side. I then turn the cutting edge of the bistoury backwards, and, in withdrawing the instrument, the division of the varix is effected."

or two in the front of the leg had nearly disappeared. The pain also in the lower part of the leg which prevented him from standing at his work, was completely relieved. He was therefore discharged the hospital.

CASE V.

John Murphy, admitted November 16th, 1816—on account of a large cluster of varicose veins situated immediately beneath the inner condyle of the femur; there were also four or five small ulcers on the leg, and the complaint was attended with considerable pain, which always increased towards evening.

I determined to try in this case, if a division of the saphena vein, where it passes on the inside of the knee, would prove advantageous, and therefore on the 21st cut the vein across with Mr. Brodie's knife, and in the manner he recommends for dividing the branches; this was followed by acute pain for the space of half an hour; after this operation the cluster of veins was wonderfully lessened in size, and the pain and tenderness with which the vessels had been previously affected gradually diminished. The ulcers soon healed, and he was discharged apparently well on the 16th of December. But he was re-admitted on the 9th of February following; the group of varicose veins be-

low the knee were as large and as painful as before the operation, and several ulcers had appeared on his leg, one of which had bled profusely a few days previous to his application at the hospital.

On the 11th, I divided the cluster of veins according to Mr. Brodie's plan; a good deal of pain and uneasiness continued in the part, and a small abscess formed where the veins had been divided, which I punctured on the 18th, and which discharged about half an ounce of pus. The part soon healed, the cluster of varicose veins totally disappeared, and he was discharged the hospital well on the 16th of March.

CASE VI.

Anne Serson admitted March 24, 1816, on account of a varicose state of the veins of one of her legs, which from the pain and swelling produced by exercise, prevented her from attending to her business as a servant. A variety of palliative means had been employed without relief, except in one instance. The veins in the leg were so much swelled, that she was apprehensive of their bursting, but the opening of one of them had been attended with temporary benefit. A large painful group on the inside of the leg was selected for operation.

It was performed in the usual manner on the 26th of March, and on the 14th of April she was discharged well.

CASE VII.

Thomas M'Guire admitted May 6th, 1818, on account of a varicose state of the veins of the right leg, which had existed upwards of thirty years, but until the last year had not occasioned any inconvenience. He had also an ulcer situated above the inner angle. Immediately under the inner condyle, the veins were particularly large and tortuous and painful upon pressure. This group was divided on the day after his admission. The wound healed by the first intention, and he was discharged on the 11th.

He was desired to return to the hospital if he felt any farther inconvenience, but I have not seen him since.

CASE VIII.

John Hoey admitted June 13th, 1818, on account of an enormous enlargement of the branches and trunk of the saphena vein, through the entire extent of the leg and thigh. The complaint

was of five years' duration, and completely incapacitated him from attending to his business. There was also a small painful ulcer on the inside of the leg just above the ankle.

I divided the trunk of the saphena vein on the inside of the knee with Mr. Brodie's knife, and according to his plan. On the 18th there was considerable pain felt at the place of the incision—19th, the pain extended up the thigh in the course of the saphena vein, which was discoloured and tender upon pressure; considerable symptomatic fever, with great restlessness and total want of sleep; pulse quick and hard; tongue brown and furred.

I directed sixteen ounces of blood to be taken from his arm, and the cathartic mixture; and poultices of bread and water to be applied along the course of the inflamed vein.

21st.—A quantity of serous fluid was discharged from the place of the incision, and the pain and tension of the limb was diminished; pulse 90. From this period, these alarming symptoms of venous inflammation gradually subsided, and he was discharged on the 5th of July. The operation completely succeeded as the varicose swelling of the veins below the incision had totally disappeared.

CASE IX.

John Kelly admitted June 27th, 1818, on account of a large cluster of varicose veins situated immediately below the internal condyle of the left leg, which was so painful during exertion as to render him totally unable to earn a subsistence. This cluster was divided in the preceding manner, and he was discharged the hospital perfectly well on the 13th of July.

Several other similar cases were operated on according to Mr. Brodie's plan with equal success; but which I cannot give as I did not take notes. A sufficient number has, however, been adduced to evince the safety and efficacy of his operation.

It will be observed that the only case which was attended with symptoms of venous inflammation (Case VIII.) had not been treated according to his directions; for in this case the trunk and not the branches was divided. The alarming circumstances that occurred in this instance, may seem at once to confirm the superior advantages attainable by his mode of operating, and impress upon the mind of my reader the danger which attends any injury to the trunks of the larger veins, whatever be the instrument with which the violence is inflicted.

CASE OF
INCURABLE DISEASE

OF THE

A R M,

ARISING FROM

EXTRAORDINARY CIRCUMSTANCES.

BY

RICHARD CARMICHAEL, M. R. I. A.

SURGEON OF THE RICHMOND HOSPITAL, HOUSE OF INDUSTRY, &c. &c.

A young woman was admitted into the Richmond hospital, on the 23d July, 1818, on account of a painful swelling of the left hand and arm, extending considerably above the elbow. The appearance of the limb resembled that which occurs in phlegmasia dolens; the fingers were bent; no fluctuation or symptoms of matter could any where be discovered; the pain was excessive, so as altogether to prevent rest, unless strong anodynes were employed; the symptomatic fever was considerable.

The patient ascribed the complaint to a needle, which she averred had broken in the palm of her hand about six weeks before ; and stated, that at present she felt the point of it at the back of her hand. Upon this part I immediately cut down, but was not so fortunate as to light on the needle. Warm fomentations and poultices were ordered, together with frequent mercurial cathartics, but the pain and tension gradually increased. Sometime afterwards, the skin and fascia covering the muscles a little above the wrist on the fore part of the arm, where the tension was greatest, were divided to the extent of three inches, so as to lay bare the muscles ; but this was not attended with any relief, although the incision was afterwards extended towards the palm of the hand, the original seat of the disease, by dividing the annular ligament of the wrist. A dark coloured fungus in a few days sprung up from the divided parts, which considerably projected beyond the surface of the skin.

The swelling of the arm extended to within three inches or less from the top of the shoulder, where it terminated abruptly. Diarrhæa set in, and her constitution was evidently sinking under the constant pain and irritation of the disease. Amputation was, therefore, recommended and performed on the 21st of September, close to the shoulder joint at the termination of the swelling.

The circulation was completely commanded by pressure on the artery above the clavicle, for there was not sufficient room for the application of a tourniquet.

On examining the limb after amputation, the thickening and enlargement was found to arise altogether from the deposition of lymph and serum, nor was there any where the slightest signs of supuration. The bones of the carpus and extreme ends of the radius and ulna, were observed to be so far softened as to yield, and be easily broken down by the pressure of the nail, probably owing to the absorption of the earthy principle.

In searching for the broken needle, we not only discovered what we sought, but to our surprise half a dozen others, each about half an inch in length, embedded in the pronator quadratus muscle under the scite of the incision ; some of them lying between the radius and ulna, and others fixed in the periosteum of the bones. Similar fragments of needles were afterwards found by the pupils—one in the palm of the hand, and others in the fore-arm above the quadratus, but none of them had entered either tendon or nerve.

The muscle in which they lay was almost changed to a firm gelatinous structure, and they were every where surrounded by firm lymph, al-

most of the consistence of softened cartilage, which seems to be the process employed by nature to insulate such extraneous bodies from the surrounding parts, as do not excite suppuration. These fragments, ten in number, I send for the inspection of the association.

It is obvious that so many needles could never have pierced the arm, without the knowledge of the patient, who has every appearance of intelligence and shrewdness, indeed rather too much of the latter, yet on being presented with these needles the day after amputation, she solemnly declared that she knew nothing of having been wounded by more than one.—The superintendants of the Dublin Female Penitentiary, an asylum for reclaimed females, in which she is an inmate, and which is admirably well conducted, have no hesitation in attributing the infliction of these evils to herself; though it is to be presumed the extent of the punishment was little in her contemplation. She had however a taste for this kind of deception, for on another occasion she complained during an entire year, of excruciating pain in her chest, attended with paroxysms of difficult breathing, that seemed often to approach the last gasp; but after enduring such a sufficiency of blisters, and issues, and bleeding both local and general, as Doctor Mills, and Doctor Edward Percival and myself thought it prudent to

prescribe, she suddenly recovered, and with great candour acknowledged that all her complaints had been dissembled; yet to account for all this finesse, which cost her so much bodily pain, she could give no reason more satisfactory than that she had suffered herself to be seduced by the instigations of the devil; but this explication involves a still stranger incongruity, for she has the character of being remarkably devout, and is seldom without a prayer-book in her hand, and a jargon of religious cants in her mouth.—I conjecture that she is not much inclined to bodily exertion, and would rather undergo any torment than work; and possibly she may have derived some little advantages, by exciting the commiseration of the very benevolent ladies who superintend the institution; she, however, when too late, became sensible of her folly, and before the operation I have described, I heard her remark, that she well deserved the punishment she was about to suffer.

I have, I fear, unwarrantably occupied the time of the Association in detailing these circumstances which are foreign to our usual line of investigation; but it is not often we see examples of a propensity so strong and persevering, as to gratify itself at the expense of so much absolute suffering; and, without adverting to the food it affords for reflection to the moral and intellectual

philosopher, it cannot but be useful, in a professional point of view, to be aware of the extraordinary mode in which formidable diseases are sometimes established.

MEMOIR, &c.

MEMOIR
ON THE
CUTTING GORGET
OF
HAWKINS,

*(Containing an Account of an Improvement on
that Instrument, and Remarks on the
Lateral Operation for the Stone.)*

BY ANTONIO SCARPA,

MEMBER OF THE NATIONAL INSTITUTE OF ITALY, AND PROFESSOR
OF ANATOMY AND CLINICAL SURGERY IN THE
UNIVERSITY OF PAVIA, &c. &c.

Translated from the Italian,

BY JAMES BRIGGS,

SURGEON TO THE PUBLIC DISPENSARY.

LONDON:

PRINTED FOR CADELL AND DAVIES, STRAND; AND
J. CALLOW, CROWN COURT;

By J. Turner, 75, Margaret Street, Cavendish Square.

1816.

MEMOIR
OF
CUTTING GORGETT
OF
HAWKINS

(Containing an account of an experiment on
the instrument and Hawkins of the
Lateral Operation for the Stomach)

BY ANTONIO SCARPA,

PROFESSOR OF THE MEDICAL INSTITUTE OF PAVIA, AND
OF THE MEDICAL ACADEMY OF TRIESTE.

BY JAMES BRIDGES,

PROFESSOR OF THE MEDICAL INSTITUTE OF PAVIA.

LONDON:

PRINTED FOR J. G. & J. H. K. STATIONERS' HALL, LONDON.

IN A SMALL, BUT HANDSOME, EDITION.

1850.

ADVERTISEMENT.

FOR the original of the following Memoir, inserted in the "Transactions of the National Institute of Italy,"* the Editor is indebted to Professor SCARPA, through whose kindness it has been sent to him, and at whose request the translation of the paper has been made for the perusal of a few individuals, whose opportunities might enable them to put to the test the instrument, and method of operating described in it.

* Atti dell' Inst. Naz. tom. 2.

With this view, but more particularly influenced by an opinion of its general utility, the Translator has been induced to lay it before the Public, presuming that, upon a subject on which the opinions of surgeons are still much divided, both with regard to the mode of operating, and the principles on which the operation should be conducted, the English reader will peruse with interest the views of a writer, not less distinguished for his profound anatomical knowledge, than for the various talent and indefatigable zeal with which he has laboured to promote the advancement of this branch of the healing art.

In repeating the operation according to the method here described, the Author, in his remarks on the paper, wishes "that the rules laid down by him, with respect to

the position of the instruments, should be carefully observed, particularly with regard to the staff, which should be held perpendicularly, and in the line of the suture of the perinæum, in order that it may form an exact angle with the blade of the gorget, which angle is calculated for its making with accuracy the lateral division of the prostate gland without injuring the rectum or internal pudic artery." He adds, that, "by this method, he extracts with ease calculi of very large size."

The Engraving has been made from the instrument itself, which accompanied the Memoir, the original plate being somewhat imperfect.

Sept. 21, Edgware Road.

MEMOIR, &c.

If, in the extraction of a large stone from the urinary bladder of a man, through the perinæum, the length and depth of the incision made in the prostate gland and bladder could be proportioned, at the will of the operator, to the bulk of the stone, a passage might be made sufficiently large, in every case, for the prompt and easy removal of it, without bruising or lacerating the parts through which it must pass. But, unfortunately, in the case of very large calculi, this is impracticable in the perinæum, not only on account of the triangular space between the arch of the pubis,

the ramus of the ischium, and the neck of the bladder, being limited; but also because the incision made in the base of the prostate gland and orifice of the bladder, cannot be prolonged beyond certain bounds, without occasioning effusion of urine, suppuration, and sloughing of the cellular membrane connecting the rectum and bladder.

That Rau, in order to extract, with the least difficulty, large calculi through the perinæum, should have cut, with success, the body of the bladder so high up, as to leave untouched the orifice of that viscus, was a conjecture of Albinus, unsupported by any certain and demonstrative proof. And all those who are acquainted with the history of surgery, know how very soon the modes of operating, proposed by MM. Foubert and Thomas, who had the same object in view, fell into discredit; and are not less aware of the serious evils which generally attend the method of Celsus, whenever the stone is of such a size as not to enter and distend the orifice of the bladder and the neck of the

urethra,* so that, in order to extract it, the incision must fall upon the left side of the fundus of the bladder above the prostate gland. The best means which anatomy has hitherto suggested to the surgeon in the extraction of large calculi from the bladder, by the perinæum, is the lateral incision of the prostate gland, within certain determinate limits of length and depth, and the prudent resolution of committing the rest of the operation to a gentle and gradual dilatation of the neck of the urethra, and orifice of the bladder. And, indeed, since the operation of lithotomy in the perinæum has received this perfection, and surgeons have commenced the practice, not merely of making a slight incision in the apex of the prostate gland, but of laying it completely open, and dividing the base of it to a certain extent, together with a small

* The term *cervix*, or neck of the bladder, has been inaccurately applied by surgeons, and not by the best anatomical writers, to what is properly the *neck* or *commencement* of the *urethra*, which extends from the orifice of the bladder, through the prostate gland, to the commencement of the membranous part of the urethra, and which in no respect belongs to the bladder. This inaccuracy frequently gives rise to much obscurity in descriptions of the operation of lithotomy.

portion of the orifice of the bladder, the violent distension which was formerly practised, during the employment of the *great apparatus*, to enable the operator to remove the stone, has been no longer necessary; and a moderate dilatation of those parts is now sufficient for the extraction of calculi of considerable size, those, for instance, of three and a half ounces in weight, and measuring sixteen lines in the small diameter; hence the *great lateral method* is, with much reason, regarded at present as the highest degree of perfection to which the operation of lithotomy in the perinæum can be carried.

The lateral operation, though executed with the greatest precision, does not exempt the surgeon from dilating, to a certain degree, the orifice of the bladder and cervix of the urethra; the dilatation of those parts, however moderate, being always necessary, even where the calculus is of middling size. The orifice of the bladder in the adult dilates almost spontaneously to the diameter of five lines, as may be found by introducing the point of the finger into the cavity of

the bladder, through the neck of the urethra. The lateral incision, within proper limits, divides the body and base of the prostate gland to the depth of four, or at most, five lines, forming with the five, to which, as it has been stated, the orifice of the bladder naturally yields, an aperture of ten lines; but in an adult, a stone of ordinary size and oval figure is sixteen lines in the small diameter, to which must be added the thickness of the blades of the forceps, consequently, even after the incision has been made with the most scrupulous exactness, the stone, though of moderate size, cannot pass out of the bladder unless the dilatation of the base of the gland and orifice of the bladder be carried to the extent of nearly eight lines beyond the size of the aperture made by the knife. But if, in order to avoid distending the parts to the extent of eight lines, the base of the prostate gland, together with the orifice of the bladder, and a part of its fundus, be divided to a depth equivalent to it, the event must necessarily be an effusion of urine into the cellular membrane between the rectum and bladder, and

consequently suppuration, gangrene, fistulae, and other serious evils.

We know indeed from Sharp,* that Cheselden, in his first attempts, divided a part of the body of this viscus, but that he was obliged to abandon that mode of operating in consequence of the injury which arose from the insinuation of urine between the rectum and bladder.† The same thing has also been adverted to by Bromfield;‡

* Critical Inquiry, chap. v.

† Cheseldenus, ut omnia tentaret, vesicam aqua hordei implebat, quantum aegri ferre poterant; dein vesicam incidebat, sed infausto successu, propter urinam inter vesicam et partes vicinas remorantem, unde gangræna qua ex decem, octo moriebantur.—Camper Demonstrat. Anat. lib. ii. pag. 14.

‡ Chirurg. Obs. Licet plerique chirurgi, quod sciam, glandulam prostatam per totam suam crassitiem dividere optent, ego tamen nollem factum. Dodrautem, aut paulo minus proxime ad partem urethræ membranousam satius et utilius, quam per totam sui crassitudinem dividi pro certo habeo. Nam primo nullibi alias præterquam in ea parte calculo obsistitur, et vesicæ cervix citra omnem lacerationem sufficienter dilatatur. Deinde partibus citius sanandi facultatem hoc fortasse dabit, sphinctere revallescente, quam si perpetuo per eas transiret urina: licetque mihi, si foret opus, liquido jurare, nunquam post ullam mearum operationum fistulam remansisse,

and since, by several other eminent practical surgeons.* Franco,† the most celebrated lithotomist of his time, was, undoubtedly, convinced, by long experience, of the danger attending a too extensive and deep incision in the base of the prostate gland and orifice of the bladder; for, he says, with reference to this, "*bref, il est, requis de tenir médiocrité.*" As the apex of the prostate gland forms the greatest resistance to the introduction of the forceps and the extraction of the stone, this part of it ought, in every operation of lithotomy in the perinæum, to be completely divided. But with respect to the body and base of the gland, an incision, extending to

quod sæpe usu evenit illis qui glandulam usque ad membranousam vesicæ partem persecuerunt. Nam, tametsi aliter visum sit multis scriptoribus, fateor tamen, me non posse non putare valde perniciosum esse partem membranousam vesicæ sauciari, et si nihil aliud affert mali, fistulas exinde orituras maxime est verosimile.

* The 17th aphorism of Hippocrates, sec. vi. on the fatality of wounds of the bladder, is true, in point of fact, with regard to those which do not leave a free outlet to the urine, and occasion effusion into the cavity of the peritoneum, or cellular membrane between the rectum, and injured bladder.

† Traité de la Taille, chap. xxxii.

the depth of five lines, through its whole length, and consequently including a small portion of the orifice of the bladder, is, with the aid of a moderate and gradually increased dilatation, sufficient for the extraction of a stone of more than ordinary size, without the parts through which it passes being greatly contused or lacerated. In children, where the orifice of the bladder, and base of the prostate gland are easily distended, and in aged persons, in whom the orifice of the bladder and neck of the urethra are generally much larger than in adults, an incision in the base of the gland less than five lines in depth, and in children, of two only, is sufficient for the extraction of a stone of ordinary size, by means of a moderate dilatation of those parts. The large size of the stone, indeed, for instance, of one exceeding twenty lines in its small diameter, is no sufficient ground for dividing the substance of the gland to such an extent as to penetrate into the cellular membrane beyond it, and fundus of the bladder; for, as an incision of such depth is constantly followed by the infiltration of urine, gangrenous abscesses, and fistulae, between the bladder and

rectum, it is obvious that calculi of such size ought never to be extracted by the perinaeum.

The lateral operation has therefore limits beyond which it is impossible to pass, without exposing the patient to more serious evils than those which could arise from the presence of the stone in the bladder. This fact, together with its consequence, or the absolute necessity of being obliged to employ, in every case of lithotomy in the perinaeum, a greater or less degree of dilatation of the orifice of the bladder and base of the prostate gland, in order to supply the deficiency in the length and depth of the incision made in these parts, however well executed, constitutes, in my opinion, the fundamental principle of lithotomy by the *lateral* method, and furnishes an exact rule by which a proper estimate may be formed of the numerous instruments which have been proposed for the prompt and safe execution of this operation. And I cannot silently pass over the error into which the student has been led, by all those who have departed from the doc-

trine of Le Cat,* and who, greatly exaggerating the advantages of the lateral operation over the great apparatus, and more especially the utility of the instruments proposed by them for executing it, have spoken of it in a manner as if, after the incision had been made, the stone were to drop spontaneously from the bladder, without making any mention whatever of the necessity of dilatation.

Cheselden, to whom alone belongs the merit of having enriched surgery with the important invention of the great lateral apparatus, in performing this operation, made use of a knife with a convex cutting edge, four lines broad, fixed upon a long handle. With this very simple instrument, he divided the prostate gland laterally through its whole length, to the depth of four or five lines; after which, by means of a slow and gradually increased dilatation of the neck of the urethra and orifice of the bladder, he extracted large calculi without any ill consequences

* Pièces concernant l'Opération de la Taille, pag. 60, 100.

ensuing to his patient. It is not however so easy a matter as an inexperienced operator might perhaps imagine, to pass a knife, within the neck of the urethra, beyond the orifice of the bladder, so that in its course it may not deviate, sometimes considerably, from its lateral direction, and not divide the prostate gland to a proper depth, especially at the base, which surrounds the orifice of the bladder; for the point of the knife is easily stopped in the groove of the staff, and either from the strong resistance which the firm substance of the prostate gland generally opposes to the gorget, so as to press it on the opposite side, or from the gland receding from the instrument, the surgeon is lead to suppose that he has laid this glandular body open to a sufficient depth; when in reality he has only divided the apex, and a very small part of the base of it.

To render the execution of the lateral operation easier to surgeons of less experience than Cheselden, was the laudable motive which induced Hawkins to propose his gorget. He thought that two great advantages would be gained by

the use of this instrument; one, for instance, of executing invariably the lateral incision of Cheselden, the other, of constantly guarding the patient through the whole course of the operation from injury of the rectum and of the *arteria pudica profunda*. Its utility as to the latter of these objects cannot be disputed, as it is evident that the convexity of the director of the instrument defends the rectum from injury, and that its cutting edge not being inclined horizontally towards the tuberosity and ramus of the ischium, but turned upwards in the direction of the longitudinal axis of the neck of the urethra, cannot wound the pudic artery. But with respect to the first advantage, or that of executing precisely the lateral incision of Cheselden, it must be admitted, that it does not completely fulfil the intention which he proposed, not only on account of the cutting edge of his instrument not being sufficiently raised above the level of the staff, to penetrate sufficiently the substance of the prostate gland, and consequently divide it to a proper depth, but because being too much turned upwards, at that part of it which is to lay open the base of the gland, it

does not divide it laterally, but rather at its upper part, towards the summit of the ramus of the ischium and the arch of the pubis; an opening, of all others, in the perinæum, the most confined, and presenting the greatest impediment to the passage of the stone from the bladder. The breadth of the point of the director is, besides, so disproportionate to the diameter of the membranous part of the urethra, that from the great resistance with which it meets, the instrument may easily slip from the groove of the staff, and pass between the bladder and rectum, a serious accident which has very often happened even in the hands of experienced surgeons.

Several surgeons of eminence have, of late years, undertaken to modify the gorget of Hawkins, but their attempts have not been successful, in consequence, I believe, of their having neglected to determine the exact relation between the parts divided in the operation of Cheselden, and the elevation and inclination given to the cutting edge of the instrument which they have attempted to

improve. Bell* has diminished the breadth of the director, but has given the cutting edge an horizontal direction. Dessault†, Kline, (Cline) Cruikshanks, preserving the horizontal direction of the cutting edge, have again enlarged the director, and have flattened the part which was before concave‡: in other words, they have only converted the gorget of Hawkins into an instrument of all others the least adapted to the performance of the lateral operation, and certainly in no respect safer or more commodious than that which Cheselden employed. These surgeons, aware of the inevitable

* System of Surgery, vol. 2, plate 13.

† Œuvres Chirurg. tom. ii.

‡ Richerand, *Mém. de la Soc. d'Emulat.* tom. iv. Le procédé d'Hawkins est celui avec lequel on évite plus sûrement l'hémorragie, pourvu toute fois que l'on se serve du gorgéret de l'inventeur; le tranchant de l'instrument tourné en haut ne peut intéresser les vaisseaux du périnée. On pourroit les ouvrir si l'on fesoit usage du gorgéret corrigé par Dessault, ou par Cline. Les changemens que ces chirurgiens ont fait subir à l'instrument d'Hawkins, bien loin d'avoir ajouté à sa perfection, l'ont au contraire privé de tous ses avantages. Deschamps, *Journ. de Med.* tom. xx. Nous avons vu le gorgéret d'Hawkins, que l'anglomanie voulait à force préconiser, subir tant et tant de corrections, que d'un gorgéret on en a fait une lame plate et tranchante, d'où on ne se sert plus.

danger of wounding the pudic artery by the horizontal direction of the gorget, direct that the handle of the staff should be inclined towards the patient's right groin, and that the gorget should be run along it, inclined in such a manner that its obtuse edge may be directed towards the rectum, and its cutting edge placed at a sufficient distance from the tuberosity and ramus of the ischium, to avoid wounding the artery. In using the instrument of Cheselden also it is necessary to give the same inclination of the staff towards the patient's right groin, in order that the incision may fall on the lateral part of the prostate gland, and not injure the rectum or pudic artery; but whoever has had experience in matters of this sort, must know how difficult it is to give a proper degree of obliquity to the staff, and how inconvenient, arbitrary, and unstable this inclination of the instrument is to the operator, in comparison with that in which the handle of the staff is held in a line perpendicular to the body of the patient, and its concavity placed against the arch of the pubis; on which stability of the instrument, the safety and precision of the lateral operation depend.

On comparing carefully the instrument of Hawkins, as it was originally constructed, with the parts to be divided, as well as with the direction, extent, and depth of the incision required in the great lateral operation, I have found that the defects of this instrument arose from the excessive breadth of the director,* particularly at the point; from a want of sufficient elevation in the cutting edge above the level of the groove of the staff; and from the uncertain inclination of the edge to the axis of the neck of the urethra and prostate gland. The cervix of the urethra, in a man between 30 and 40 years of age, is only three lines in diameter at the apex of the prostate gland, four lines in its centre, and five near the orifice of the bladder. The apex of the prostate gland is rather more than two lines in thickness, the body or centre four, and the base six and sometimes eight, which surrounds the orifice of the bladder. In an adult of middle stature from eighteen to twenty years of age, the thickness of the base of the prostate gland is about two lines less, compared with that of a man of forty,

* The grooved or concave part of the gorget. Ed.

and of a large size. The precise line in which the lateral incision of the prostate gland should be made in an adult, is found to be inclined to the longitudinal axis of the cervix of the urethra and of the gland itself, at an angle of 69° . Now, from these data, drawn from the structure of the parts, the director of the gorget of Hawkins, with the alterations which I have made in it,* is only four lines broad, and two deep, the breadth decreasing at the beak.† The cutting edge of the instrument is straight near its point, but gradually rises, and becomes convex above the level of the staff, so that its greatest convexity‡ is seven lines broad. Lastly, the inclination of the cutting edge to the longitudinal axis of the director, is exactly at an angle of 69° ; that is to say, the same as the left side of the prostate gland to the longitudinal axis of the neck of the urethra.

The method of operating with this instrument is as follows: having introduced the staff into the bladder, the curvature of which corresponds exactly to that of the axis of the neck of the

* Fig. 1, a a, † Fig. 1, c, ‡ Fig. 1, d d

urethra and prostate gland, and the extremity of which is rather longer than that of the ordinary staff, so as to penetrate the bladder to the extent of an inch and a half, and the external incision, and opening into the membranous part of the urethra, being made in the usual manner, avoiding the bulb, the surgeon with his left hand should hold the staff firmly against the arch of the pubis, in a line perpendicular to the body of the patient; then taking hold of the gorget with his right hand, and inserting the beak in the groove of the staff, so that the convexity of the director may be directly placed over the rectum, should run the gorget on, in a line as nearly parallel as possible to the horizontal extremity of the staff situate in the bladder, not stopping until he feel that the beak of the instrument has reached the closed extremity of the groove of the staff. After having removed the staff from the bladder and urethra, and introduced the forceps upon the groove of the gorget, the latter is to be gently withdrawn upon them, in the direction in which it had been introduced. Lastly, the position of the stone being discovered, by means of the forceps, the blades are to be gently opened, and

the neck of the urethra and orifice of the bladder, so far gradually dilated by them, that the operator may be able to take hold of it easily, and extract it, without bruising or lacerating the parts through which it is to pass.

It is a certain fact, which I have ascertained by repeated observations and measurements, taken from the dead subject in the adult, that a line inclined to the axis of the neck of the urethra and prostate gland, at an angle of 69° , passes laterally through the base of the gland, at the part most convenient of all others for the extraction of the stone in the perinæum, this being neither too near the arch of the pubis, nor the inferior and posterior surface of the gland.* And as the cutting

* The prostate gland is shorter on its anterior than posterior surface; and the cervix of the urethra does not pass precisely through the centre of it, but through that portion of it which is nearest the arch of the pubis. On account of the greater shortness, therefore, of the cervix of the urethra, and smaller bulk of the gland, the nearest way from the membranous part of the urethra to the cavity of the bladder, would be through the anterior part of it; but as the incision made in the smaller portion of it would fall immediately under the arch of the

edge of the gorget is inclined to the longitudinal axis of the director, precisely at the same angle, when the instrument is held in the direction of the natural axis of the neck of the urethra and prostate gland, it follows, from mechanical necessity, that in pressing it into the bladder in a line as nearly parallel as possible to the horizontal groove of the staff, the whole of the gland, with the orifice of the bladder, must be cut through at this precise point.*

The staff being held firmly against the arch of the pubis, in a line perpendicular to the body of the patient, so that the convex part of the director may be placed towards the rectum, and take the exact course of the axis of the neck of the urethra and prostate gland, is an invariable guide by which the cutting edge at this determined angle must

pubis, which would present a great obstacle to the passage of the stone, the lateral incision, though carried through the longest and thickest part of it, must always be preferable to a division of it anteriorly.

* In the construction of the instrument, therefore, great skill and accuracy are requisite on the part of the artist.

of necessity divide the gland laterally at the part most advantageous for the removal of the calculus. This rule is the more easily to be determined, and more securely observed, as the staff lodges itself, as it were, under the arch of the pubis; and as this, of all the positions which can be given to it, is the firmest and the most commodious to the surgeon, during the operation.

With regard to the depth of the incision, it must be observed, that the director of the instrument is four lines broad and two deep, and that its cutting edge, for a man of full stature, between 30 and 40, is seven lines in breadth at the most convex part. At the time when the gorget is situated in the membranous part of the urethra and apex of the prostate gland, which canal is three lines in diameter, the apex of the gland being little more than two lines in thickness, is completely divided by it. The instrument running in succession through the axis of the neck of the urethra, to which the body and base of the prostate gland laterally correspond, the former being four lines in thickness, the latter six and sometimes eight, the director enters a

canal of four lines in diameter; that is to say, of the thickness of that part of the instrument itself. Here the gorget being forced by the firm texture of the gland against the opposite side of the canal, which is susceptible of a certain degree of distension, the whole breadth of the blade is not engaged in the division of the body of the gland, but probably about a line less. It completely divides it, however. The instrument having, lastly, reached the closed extremity of the groove of the staff, that is, having penetrated the bladder to an inch and a half beyond its orifice, as the latter yields almost spontaneously to the diameter of five lines, while the director of the instrument is only four, and the gorget is pressed aside by the hardness of the prostate gland to the extent of about a line, it follows that the base of the gland is only divided to the depth of about five lines, though the cutting edge of the gorget is seven in breadth. There are therefore always two and sometimes three lines, of the substance of the base of the gland, according to the difference of the subject, remaining undivided, which, as I have already stated, is of great consequence to the success of the operation, because the portion

around the orifice of the bladder which is untouched, prevents the insinuation of urine, and the formation of gangrene or fistulae between that part and the rectum, and offers but a slight resistance to the dilatation, which in every case must necessarily be made, in order to effect the extraction of the stone. The same proportion holds in cutting a young man of middle stature, of from 18 to 25 years of age, with a gorget, the edge of which is only five lines broad, as that represented in the plate.

In the lateral operation with the knife of Cheselden, carefully executed, by a skilful hand, upon a man 45 years of age, and of full stature, the apex of the prostate gland is found to be completely divided, and an incision made in the base of it, to the depth of only four, or at most five lines; a result precisely the same as that which is obtained in performing the operation with the improved instrument of Hawkins, the cutting edge of which is seven lines in breadth at its most convex part. It agrees also, in this respect, when compared with the lithotome caché of Frère Côme; for

on using the latter instrument, opened at No. 12 or 13, upon the dead subject in an adult, the apex of the prostate gland is found to be completely divided, and the base of it which surrounds the orifice of the bladder, laid open only to the depth of four or five lines; which precisely coincides with the results of the numerous experiments made by me on the dead subject with the new gorget.

It is proper to remark, however, that, to obtain these results, in using the knife of Cheselden, the edge of which is only four lines broad, it is necessary to press the instrument sufficiently within the bladder, and to observe, in retracting it, to press on the back of it, and raise the handle, in order that it may penetrate sufficiently the substance of the prostate gland, from the firmness of which it is easily pressed on the opposite side, making only a slight division of those parts. In using the lithotome of Frère Côme, it is also requisite, in the act of drawing out the instrument, after it has been opened in the bladder, to raise the hand, in order that it may divide the base of the gland and orifice of the bladder to a pro-

per depth, and then to depress the hand again for the purpose of completely dividing the apex. In making these movements of elevation and depression, it is obvious that an operator, without sufficient experience, may easily deviate from the proper limits, and either not divide the base of the prostate gland to a sufficient depth, or carry the incision beyond it; not taking into account, that, having no certain rule to guide him in the inclination given to the cutting edge, before he withdraws it from the bladder, he may easily deviate from the exact direction of the wound, and consequently either injure the *arteria pudica profunda* or the rectum.* On the other hand, in using the gorget, with the alterations proposed, according

* Deschamps, *Traité historique et dogmatique de la Taille*, tom. iii. sect. 95. "Il est peut-être de tous les instruments celui qui conviendra le moins aux jeunes praticiens."—And at sect. 916, "Je dirai plus; de tous les instruments connus pour pratiquer l'incision au col de la vessie, celui du Frère Côme sera, peut-être, le plus dangereux, quand il ne sera pas conduit avec prudence, parce qu'il peut, s'il est plongé trop avant dans la vessie, intéresser la partie postérieure de ce viscère; il peut aussi manquer l'incision projetée, s'il n'est pas poussé assez avant dans cet organe. La manière de le placer en le retirant, influe encore sur la régularité de l'incision."

to a certain and invariable rule determined by the perpendicular position of the staff to the patient's body, and the inclination of the cutting edge to the axis of the neck of the urethra, the direction and depth of the incision will be always exact and within certain limits, nor can there be any apprehension of the instrument extending beyond the substance of the base of the prostate gland so as to injure the pudic artery, much less of its slipping downwards upon the rectum.

The *profunda* branch of the pudic artery,* being detached from the common trunk of the pudica, close to the tuberosity of the ischium, runs from this point to distribute the greater number of its branches to the bulb of the urethra, and is liable to be wounded even in the act of opening the membranous part of the urethra, if the point of the knife be not carried beyond and beneath the bulb. It is also liable to be divided in withdrawing the knife of Cheselden, or the bistouri caché, if the edge of either instrument be too

* Scarpa sull' Aneurisma, Tab. IV. 7.

much inclined towards the ramus or tuberosity of the ischium; but nothing of this sort can ever happen in using the new gorget, as its edge, directed obliquely upwards, never extends beyond the base of the gland so as to injure this artery.

The advocates for the bistouri caché of Frère Côme, among the advantages enumerated in its favour, lay great stress on the facility and security with which the wound in the neck of the urethra may be enlarged by means of this instrument, opened at No. 5, whenever the first incision has not been found large enough for the extraction of the stone. Although I am of opinion that this can never be necessary in using the gorget now recommended, the blade of which is proportioned to the size of the prostate gland in the adult; and also, that it is a very difficult matter, either with the lithotome caché, or with any other instrument, after it has been withdrawn from the wound, to make the second incision precisely at the bottom of the first; yet, if this is to be regarded as an advantage in the bistouri caché, it is equally so in the instrument here proposed. For if, after

the internal incision has been made, and the forefinger of the left hand introduced into the bladder, along the blade of the instrument, the operator find it necessary to enlarge the wound further in the base of the gland, he has only to apply the fore finger upon the obtuse edge of the director, while, with his right hand, he moves the gorget backwards and forwards, in the manner of a saw, by which he may extend the incision in the neck of the urethra and prostate gland at pleasure, and certainly with less danger of making a fresh wound than in using the knife of Cheselden, or the instrument of Frère Côme, after it has been withdrawn from the bladder.

With regard to surgical instruments generally, and particularly those which have been proposed for performing the lateral operation, Deschamps thinks that the instruments, which are really perfect and useful, are those in which no alteration has been attempted. However true this opinion may be, in general, it does not exactly apply, to the gorget of Hawkins, the alterations made in this instrument by Bell, Dessault, Cline, and Cruik-

shanks, being rather so many deviations from the principles upon which the instrument was originally constructed, than improvements in it. The form which I have given to it, is rather a modification than an alteration of its primitive shape, that it may fulfil more exactly than before the intention of dividing the prostate gland laterally, and to a proper depth, as Cheselden did, without running the hazard of wounding the pudic artery or rectum. From the repeated experiments on the dead subject, and operations which I have performed with it successfully on the living, before numerous students in this University, I am authorized in declaring it to merit a distinguished place as an instrument of surgery, and consequently in recommending the use of it more particularly to young surgeons.

EXPLANATION OF THE PLATE.

FIG. 1.

The Gorget, viewed on the back part.

- a a* The Director.
- b* The Handle.
- c* The Beak.
- d e* The Cutting Edge.

FIG. 2.

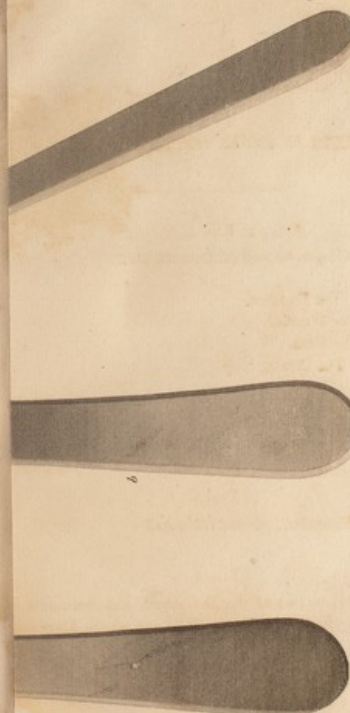
The Instrument, seen on the fore part.

FIG. 3.

The Instrument, viewed sideways.

FIG. 4.

Vertical section of the Instrument, and inclination of the Cutting Edge to the longitudinal axis of the Director.



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Fig. 2.



Fig. 1.

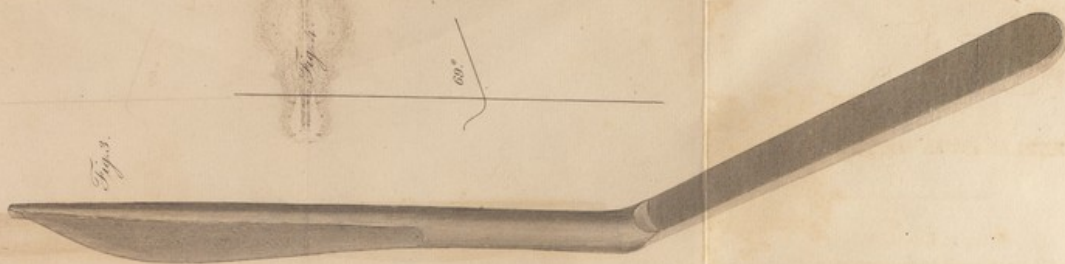


Fig. 3.

Published by T. Cadell & W. Davis, Strand, London.

Revised in 1841.

Thin the Author

CLINICAL REPORT

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HONORARY FELLOW OF THE KING'S AND QUEEN'S COLLEGE OF PHYSICIANS,
PROFESSOR OF MATERIA MEDICA, ONE OF THE PHYSICIANS TO STEVENS'
HOSPITAL, AND TO THE HOUSE OF INDUSTRY.

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IN TWO PARTS.  
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FROM THE TRANSACTIONS OF THE KING'S AND QUEEN'S COLLEGE OF PHY-
SICIANS IN IRELAND.

DUBLIN:

PRINTED AT THE HIBERNIA PRESS-OFFICE, NO. 1, TEMPER-LANE,
For John Cumming, No. 16, Lower Ormond-Quay.

1818.

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HONORARY FELLOW OF THE KING'S AND QUEEN'S COLLEGE OF PHYSICIANS,
&c. &c.

Read June 1, 1818.

UNTIL within these few years, that Dr. Blackall's book, on the nature and cure of dropsies,* was published, little has been added to the practical knowledge which has been long taught in the schools on the subject of those diseases. Cases of dropsy, where a treatment similar to what he recommends was adopted, have been occasionally published in the different journals; but Dr. Blackall seems justly entitled to be considered the first of the moderns who pointed out the practical

* Blackall on Dropsies.

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inferences to be deduced from an accurate observation of the urine, and who ventured to improve the practice in dropsy, by a bold and energetic mode of treatment. It would be out of place here, to do more than bear testimony to the merit of that work, which at all events, is calculated to stimulate those who have opportunities of hospital practice, to put the speculations of that distinguished author to the test of experience.

The chronic wards in Steevens' Hospital afford excellent opportunities for an investigation of this nature; dropsy is a disease of frequent occurrence in Dublin, and the greater number of those, affected with such diseases, resort to Steevens' hospital; the tradesmen and manufacturers, besides servants, and the labouring poor, not only from the city, but from a considerable distance, with constitutions injured by exposure to inclemency of weather, and broken down by intemperance.

A minute investigation of all the cases of dropsy, admitted within a year, might be an useful illustration to a knowledge of those diseases; and serve, so far as this limited number might allow us to conclude, how far Dr. Blackall's views are founded or not.

Most practical writers on diseases, publish only the fortunate cases: they select those, perhaps, which may correspond with their theories, or suit their practical views; whereas it is only from the experience of a great number, from an impartial account of all, the fatal as well as the successful cases, that any thing decisive can be collected.

For this reason, it is proposed to give the result of all the dropsical diseases which were admitted into Steevens' hospital within the compass of one year, without any selection, not even excluding those who died a few hours after their admission.

More ample information might certainly have been acquired, by waiting until a greater mass of intelligence had been collected; but it is deemed better to publish this report, that others, who have similar opportunities, may make comparative trials of the same nature.

This report contains a brief account of seventy-four dropsical patients, and is divided into two parts:—The first part gives a history of the fatal cases, and of the appearances after death; the object of this may be supposed to be illustrative of the pathology of dropsy. Fifteen dissections are given, from which an attempt is made to shew what organs, and what textures are involved in

destructive changes; and it is not difficult to infer, even from this limited number, what are the most predominant changes of structure in the different variety of dropsical diseases. The history of six fatal cases, not examined after death, are next given, to account for the total number of deaths.

The cases and dissections are not given exactly in the order of their admission; those instances where the cavity of the thorax, and the viscera which it contains, are chiefly involved, are first grouped together; the same arrangement is observed where the viscera of the abdomen and the parietes of that cavity are engaged: these follow in succession.

The dissections were all performed by Mr. Cusack, the resident surgeon at Steevens' hospital, and I gladly embrace this opportunity to return him my thanks. He was obliging enough also to draw up a written report of all the dissections, which are given in his words.

The second part of this report gives the history of 53 cases variously treated; 35 of these, to all appearances, were completely cured. In seven instances considerable relief was afforded; some of these were altogether, others nearly emptied of dropsical accumulation.

In 8 cases the patients left the hospital nearly as they came in, some of them relieved in a trifling degree; others, whose cases were hopeless, in progress to their ultimate termination, but averse to undergo further medical treatment, and anxious to return to their families.

Three patients left the hospital shortly after their admission, having scarcely submitted to any medical treatment:—some of these were discharged for irregular conduct.

Of the 35 patients cured, 23 were subjected to general venæsection, some of them four or five times, besides local bleeding, and blisters; most of this description took little inward remedies. The account of these patients is placed first among the cases cured, being the most numerous and perhaps not the least important.—12 cases, where the lancet was not used, came next in succession. Short observations are made after each of the cases treated with success, as well as in each instance of failure. The report would not have been encumbered with the entire number, but for the reason already assigned, that it was desirable to avoid the appearance of making any selection.

But little reference is made to any of the wri-

ters on dropsy: as it is not intended to give a complete view of dropsical diseases, a practical illustration is the object of this report. There is no claim to novelty, but an anxious desire to ascertain what is true, to confirm what has been already observed, and to put remedies long in use to the test of rigid experience.

The following table gives a synoptical view of the 74 cases.

Cured.	Dead.	Relieved.	Not relieved.	Left the Hospital.
35	21	7	8	3
B 23 12	B 11 10	B 5 2	B 4 4	3

CASE I.

Mary Callaghan æt. 22, June 27th, 1817, was admitted with symptoms of very general anasarca; the face, the trunk of the body, the thorax, especially the legs and thighs, were unusually cedematous; the abdomen much distended, and fluctuation evident; pulse small and oppressed, respiration hurried and laborious; urine of a high colour; she suffered excessive

* Those marked B, were subjected to general venæsection.

pain in the scrobiculus cordis. Dropsical symptoms were present only six weeks.

She had been given mercurials inwardly by her husband, in the form of solution; this was followed by severe pains in her bowels, the catamenia became suppressed, the swellings then appeared; she attributed her illness to the mercurial medicine.

On her admission to the hospital, venæsection, to the extent of ten ounces, was twice performed at the interval of a few days; this afforded temporary relief to the pain, anasaruous swellings left the upper extremities, and there was a considerable diminution in the size of the abdomen. Symptoms, however, of distress in her breathing, return of pain in the scrobiculus cordis, greenish vomiting and hiccup came on; and she died in agony on the 8th of July.

Dissection, 9th July.

Lower extremities anasaruous; only two quarts of fluid in the abdomen; abdominal viscera sound; lungs quite healthy but adhering in many points; above half a pint of serous fluid, with flakes of lymph, in the pericardium, a white spot on the right ventricle, half an inch in diameter, evidently from a deposition of coagulable lymph.

Observations.

This appears to have been a case of dropsy of the pericardium, subsequent to inflammation of its inner membrane. The effusion into the cavity of the abdomen and cellular substance, seems to have been symptomatic and consecutive.

That there was inflammation of the pericardium is evident, when the previous symptoms are considered, the presence also of those flakes of lymph,* are generally considered to be demonstrative of inflammation of the serous membranes.

It is scarcely necessary to state how obscure the symptoms of pericarditis are, should it occur in a subacute or chronic form.† In the present instance, the patient referred her sufferings, which really were in the heart, to the stomach; and there might have been reason to suspect a læsion of the latter organ, where oxymuriate of mercury had been taken.

It is not improbable, that the train of morbid occurrences were in the following order:—First, irritation in the stomach from the acrid mercurial,

* Bichat Anat. Gen. Art. Syst. Sereux—p. 531.

† Corvisart, p. 24.

amenorrhœa from the same cause, concurring with the influence of cold and mental depression; next, congestion and inflammation in the membranes of the heart and pericardium, in a person predisposed; lastly, effusion into the cellular substance, and cavity of the abdomen.

It has occurred to the writer of this report often to observe œdema of the face shewing itself before the appearance of any other dropsical symptom; and on close investigation, it was frequently found associated with some disorder of the heart, or its membranes. If this observation be correct, œdema of the face might be considered as one of the diagnostics of dropsy of the pericardium, in addition to the other signs which are marked with such accuracy by Corvisart.*

Had general and local detractions of blood been practised at an earlier period, when the local pain and the menstrual suppression pointed out, that a new determination of blood had taken place; and probably, that inflammatory action had commenced in an organ of the first importance, the result might have been different. It may be well conceived how great the distress must have been, when there was so much fluid in the pericardium.

* Corvisart, p. 48.

as half a pint, collected in so short a period. Patients, undoubtedly, will endure even greater accumulations, if they are formed more gradually; but even so, the obstacles to the free circulation of the blood may be easily calculated.

This case then may be considered as a hopeless one at the period, in which it was subjected to medical treatment: that it shewed evident marks of a congestive and inflammatory nature, in the first instance, is equally proved by the appearances after death as by the previous symptoms, as well as by the causes which appear to have been instrumental in exciting it.

CASE II.

Edward Anderson, æt. 19. July 4, 1817. Anasarca of the face, head and arms, legs, thighs, and body, has come on in the order of the parts enumerated. Abdomen distended, and contains a fluid; lips and cheeks appear purple and livid; cough, and pain of the left side; pulse small and indistinct, not frequent; urine scanty and red; diarrhœa; has been dropsical for seven months: it came on immediately after a fall from a car.

He was partially relieved by a single venæsection, the cough and pain of his side having been re-

moved; in other respects the treatment was ineffectual. He died on the 18th.

Dissection, 19th July.

Body anasarcaous: not much fluid in the cavity of the abdomen; liver enlarged, presenting a peculiar marbled appearance; some effusion of lymph about the spleen. The other abdominal viscera healthy; lungs sound, slightly adherent: the heart adhered to the pericardium in many points; the bands of adhesion appeared not to have been of recent formation.

Observations.

This case originated evidently in inflammatory affections, chiefly in the thoracic viscera. The adhesion between the heart and pericardium must have been the result of inflammation. The adhesions of the pleura were likewise demonstrative of an inflammatory state; but as these latter often occur independent of dropsy, no great stress is to be laid on this appearance, unless in connexion with others. Anasarca of the face may again be noticed as a symptom attending disease in the heart. The causes of dropsy, however, in this instance were not confined to the thoracic cavity. The state of the liver and of the spleen, the effu-

sion of lymph about this latter organ, plainly shew that inflammatory action had been going on in the cavity of the abdomen. The case, however, was not subjected to medical treatment, until these organic changes of structure had advanced too far to admit of cure.

Dropsy frequently follows an injury sustained by a fall, as in this instance—in those cases irremediable changes of structure generally take place, either in the heart, lungs, or liver.

CASE III.

John M'Dermot æt. 32, a labourer—January 26, 1818, about a fortnight before his admission, after exposure to cold, was seized with shivering cough, hoarseness, pain of chest, dyspnoea and oppression; these symptoms were immediately followed by general anasarca and ascites; his pulse frequent, urine high coloured and muddy. He was immediately bled to the extent of ten ounces, with a view to relieve his organs of respiration.

On the 29th, the venesection was repeated; his cough, pectoral distress and hoarseness having still continued. His swellings were now observed to be diminished.

February 2nd, having injudiciously exposed himself to cold frosty air, he experienced an attack of shivering, with acute pain of chest, increased cough and dyspnæa. He was bled for this on the 2nd, and likewise on the 2rd.

On the 16th, his dropsical swellings were gone, but it was easy to see from the continuance of his dyspnæa, his irregular pulse, from the observance of a strong pulsation in the scrobiculus cordis, that the heart was aneurismal, and that little was to be expected from medical treatment. He died on the 1st of March.

Dissection, 2nd March.

Lungs sound; heart 3 times its natural size; increase confined to the left ventricle—semilunar aortic valves converted into a polypus-like substance mixed with ossific matter—a similar diseased appearance within the valves, towards the left ventricle covered with excrescences about the size of a garden pea.

Liver much enlarged, but not diseased in structure.

Spleen enlarged to 8 inches in length, and proportionally in all its dimensions, in structure softer than natural. Peritoneal coats of the intestines were more vascular than natural.

Observations.

The history of this case plainly points out its inflammatory origin: it shews also that though medical treatment was resorted to when it was too late, that so far as dropsy was concerned, the accumulation of fluid was disposed of; this patient indeed at one time was apparently convalescent, and but for his indiscreet exposure to cold on a frosty day in February, his life might have been considerably prolonged.

It is material to observe that the bleedings which were practised to relieve the state of his pectoral organs, did not interfere with the removal of the dropsical swellings; on the contrary, they appeared to expedite their disappearance.

It is not impossible that an aneurismal state of the heart might have existed to a certain extent, antecedent to the month of January, the period from whence his severe illness is dated, but that

dropsy was not established, until exposure to cold induced an inflammatory state in the heart, and gave a sudden increase to that change of structure in the semilunar valves which occasioned so much embarrassment to the circulation. Chronic, and sub-acute inflammations of the heart, which are known to give rise to those organic derangements of that viscus, frequently recur in a more severe form, and there is reason to believe, that in some instances this disorder of the valves is produced in a very short space of time.

The liver and spleen were not sufficiently changed in structure, of themselves to have given rise to dropsy; they were in a state of congestion, which would have been easily removed under proper treatment, had the condition of the pectoral organs been such as to allow a prolongation of life. Indeed we may infer from the state of these organs, that detractions of blood, and the use of purgatives were the remedies most likely to remove this state of sanguine congestion in the liver and spleen; and, as has been already observed, these measures were probably instrumental in carrying off the dropsical effusion.

The vascular state of the peritoneal coats of the intestines was to a certain extent connected

with effusion into the cavity of the abdomen, but as this vascular state, as well as the attendant dropsy, were ultimately perhaps the result of disease in the heart, and at all events as this accumulation of fluid was removed, we shall not attach much importance to those causes of dropsy which appeared in this instance in the cavity of the abdomen.

CASE IV.

Bridget Harper, æt. 30; May, 1817, has been four months dropsical, her legs, thighs, body and face, are anasarcaous; her abdomen swelled and with fluctuation; she is unusually pale, and leuco-phlegmatic; disease came on with pains in both shoulders shooting across the clavicles, with cough and dyspnœa, and high coloured muddy urine.

Since the commencement of her illness, has had an accouchment. This event has not in any respect changed the character of her complaints.

No hopes were entertained of relieving this patient: she died on the 10th. Her treatment consisted in the administration of diuretics, and light cordial medicines.

Dissection, May 11th.

Lungs sound; eight ounces of fluid in the pericardium; a white spot the size of a shilling on the surface of the heart; this appeared to be a deposit of coagulable lymph.

About four quarts of dark straw coloured fluid in the cavity of the abdomen.

Liver slightly tuberculated, its surface somewhat rough.

The uterus was six inches in length, and appeared unusually vascular, as if injected with red blood, its inner membrane was covered with bloody mucus.

Anasarca of the cellular substance of the skin had subsided considerably antecedent to death.

Observations.

Anasarca is no uncommon attendant on pregnancy; and it as often disappears after delivery: but in the present instance dropsy appears to have been established independant of the gravid state, from causes affecting both the thoracic and abdominal viscera.

The deposit of coagulable lymph on the surface of the heart,* and the effusion of fluid into the pericardium, after the inflammatory symptoms with which the disease commenced, plainly shew what was the original character of her complaints.

In this instance again, anasarca of the face may be observed, associated with disease of the heart.

The appearance of the liver, although in progress to a tuberculated state, was not sufficient in itself to give rise to dropsy; but the condition of that organ, and the pregnant state must have acted as concurrent cases.

The case then may be considered as a neglected pericarditis, terminating in effusion.

The appearance of the uterus might by some be considered as demonstrative of an inflammatory, or at least of a congestive state, perhaps it had not returned to its ordinary dimensions after pregnancy and parturition.

CASE V.

Cornelius Ryan, æt. 30, a barber, June 30th, 1817, a pale livid emaciated looking man, addicted to intemperance, and suffering from cough and dyspnæa for two years, became suddenly

* Corvisart, p. 42.

anasarcous in his legs, thighs and scrotum; his abdomen also much distended; pulse small not frequent; urine scanty and high coloured. Dropsy appeared only three weeks before his admission into the hospital.

His treatment consisted in a blister to the chest, diuretics and mild aperients. The swelling of the abdomen was reduced, the œdema of the scrotum disappeared, his respiration however was not relieved. He died on the 6th July.

Dissection, July 7th.

Limbs anasarcaous, abdominal viscera healthy; liver free from disease, but turgid with blood; upon being washed it presented the natural colour.

Lungs adhered to the pleura, on both sides; they were heavier than in the natural state, and studded throughout with numerous small tubercles, some of them suppurating. There was more than the natural quantity of serous fluid in the pericardium. The vessels of the heart were much loaded with blood.

Observations.

This patient died rather from a considerable

change in the structure of the lungs having taken place, so as to unfit them for the office of respiration, than of dropsy; although the effusion into the pericardium might have been instrumental in hurrying the fatal event.

There can be very little doubt but that an inflammatory state of the membranes of the lungs, as well as of their substance, was in existence for a considerable time, as is proved by the adhesions and the increased density of that viscus; tubercles probably existed for a considerable time, but had not some additional exciting causes been applied, as cold and intemperance, the case probably would have terminated in pthisis rather than in dropsy.

The liver was in a state of sanguine venous congestion; this might have depended partly on the difficult transmisson of the blood through the lungs, and partly on his intemperate habits. It is a question whether general venæsection with smart purging might not have removed the sanguine plethora of the liver, and given a different result; but the patient from his enfeebled and emaciated state, appeared an unfit subject for such practice. It may be observed that the removal of the dropsical fluid from the cavity of the abdomen under the influence of diuretics, did not afford any prospect of recovery.

Dropsy in this instance appears to have been induced chiefly by inflammatory action in the lungs, and in the membranes of the pericardium.

CASE VI.

Lucy Swift, æt. 28—July 25, 1817, has been generally anasarcaous for eight months before her admission; ascites is also present; it came on a month later. The first dropsical symptom was œdema of the face, accompanied with distressed breathing; her looks are leuco-phlegmatic, with an occasional purple tinge on the cheek. Pulse 80, hard and cordy; urine scanty and red. Catamenia were suppressed shortly before her breathing became affected; she ascribes her disease to lying in a damp cold cellar.

She was bled twice before her admission into the hospital.

On the 28th, she was bled to ten ounces chiefly at her own request; her face that day was flushed with a circumscribed spot; her pulse cordy and irregular. On the 1st August, her pulse continued hard, her cough incessant; a strong pulsation was evident in the carotid; the only relief she experienced was from bleeding: it was again practised on this day; her cough was relieved,

the swellings were diminished, but her dyspnœa and difficulty of lying down having daily increased, she died on the 18th of August.

Dissection, 19th August.

Abdomen contained a considerable quantity of fluid; small intestines had their coats thicker than natural; mesenteric glands enlarged; liver enlarged, gorged with blood, and appearing on its surface to undergo organic changes.

On raising the sternum no lungs could be discovered, as they were hid by the heart and its membranes; pericardium contained a pint of fluid. Heart itself three times its natural size. The wall of the right ventricle was softer and much thinner than natural; increase of thickness was in the left ventricle; a fluid seemed effused beneath the membrane covering the heart; no disease of the valves, nor could any alteration in the structure of the lungs be discovered. The veins of the thorax were much distended.

Observations.

Cough and dyspnœa were the earliest symptoms, attended with anasarca; diseased action, therefore, probably took place first in the thoracic vis-

cera. The train of morbid symptoms which occurred in the abdominal viscera, must have been of a later date.

Cold and damp concurring with suppression of the menstrual discharge, were causes fully sufficient to induce an inflammatory disease in the pectoral organs. Why the disease fell on the heart, and its membranes in preference to the lungs, must have depended on the state of predisposition in the former. That the disease, however, was inflammatory in the first instance, appears clearly from the train of symptoms, as well as from the causes which induced it. The case was too far advanced to admit of more than temporary alleviation from medical treatment; the relief she experienced from blood-letting before her admission, was the reason for its repetition; anasarca of the face, which was the first dropsical symptom in her, may be again noticed as an attendant on disease of the heart.

The chief cause of death in this patient appears to have been the increasing volume of the heart and pericardium. They encroached so much on the lungs, as not to leave a sufficiency of this important viscus, for the purposes of respiration.

The ascites might have been connected to a certain extent with the plethoric state of the liver,

and the indurated condition of the mesenteric glands, as well as with the diseased appearance of the membranes investing the intestines; the peritoneal coatings of which were in a state of chronic inflammation, indurated and thickened by a layer of coagulable lymph. Effusion in both cavities evidently was the result of this preceding inflammatory action.

Had this distressing case been met by a vigorous depleting practice on the occurrence of the menstrual suppression, the press of blood on the heart, and consequent enlargement of that viscus, might have been prevented; the effusion into the pericardium might also have been anticipated. The same practice might also have prevented the vascular plethora of the liver, which succeeded the catamenial suppression; possibly in that event, the inflamed state of the peritoneal membranes of the intestines, and their consequent change of structure might have been superseded by a timely active practice.

The enlargement of the mesenteric glands might in part be attributed to the same general causes, which first gave rise to an inflammatory state of different textures in the cavities of the thorax and abdomen, and ultimately to those serous effusions

which invariably succeed such organic changes in structure.

CASE VII.

Mary Dignam, æt. 40. May 9, 1817. A sallow tall woman much emaciated; above twelve months dropsical; abdomen tense, painful on pressure, and a hard substance can be felt underneath the fluctuating fluid on the right side; anasarca general urine scanty, red and stains her linen; pulse small, not much hurried; respiration natural.

This was considered a case of true schirrus liver, conium and other deobstruents were given; efforts were made also to promote the secretion of urine. This treatment, with other palliative means, proved ineffectual; she died on the 18th of June, in the last stage of emaciation. The ascites were somewhat diminished before her death.

Dissection, 19th June.

Abdomen contained above two gallons of straw coloured fluid.

Liver enormously large, consisting of a con-

geries of tubera* circumscripta; scarcely any portion of this viscus sound; neck of the gall-bladder surrounded with small tubera.

Stomach healthy, but its lesser arch covered with tubera.

Lungs tuberculated throughout and adhering to the pleura costalis on the right side. Heart sound, but having a fluid effused beneath its outer membrane and a small hydatid on its surface.

Observations.

This may be considered a sample of the very worst and most incurable variety of dropsy; that kind in which remedial treatment makes the least impression, and where our methods of cure have hitherto proved ineffectual.

The general schirrous or tuberculated diathesis, in this case, is worthy of remark; the lungs, the liver, the gall-bladder, the stomach were all beset with tubercles. It was of this disease, which gradually encroached on the powers of life, that the patient died; the dropical accumulation was considerably diminished before death.

* Farre Morbid: Anat. of liver.

Effusion in this instance, was symptomatic and dependant on the schirrous state of the liver and lungs, and on the difficulty which the blood encountered in its circulation through these organs.

It is desirable to establish a diagnosis between this assemblage of symptoms, and the other varieties of dropsy. The scanty urine with high red sediment, which tinges linen, is seldom wanting in cases of schirrous liver, differing in colour from that tinged with bile, and in intensity from the usual deposits in the other forms of dropsy.

If there is not very considerable distention, the liver can usually be felt; though not always so, as sometimes it is shrunk * in size. The pallid, dusky emaciated appearance, with shiverings and profuse sweats, are for the most part demonstrative of this form of disease. In this patient there were traces of strong inflammatory action in the thoracic viscera, which at all events, must have assisted the dropsical effusion and hastened the fatal event.

CASE VIII.

Edward Gibbons, æt 53.—Feb. 20, 1818. Considerable anasarca of the legs and thighs, enlargement and fluctuation of the abdomen, cough,

* Vid. Case 10, dissection.

stitches in the breast, pain of back, belly and loins, scanty red urine, pulse small and frequent.

Dropsy had subsisted above 12 months; cough and stitches came on within the last month.

His cough and pectoral symptoms were soon relieved; but he sunk under the complication of his other symptoms, and died the 5th of March.

Dissection, March 6th.

No morbid appearance in the thorax; abdomen contained a large quantity of fluid; liver diseased, covered with numerous tubercula circumscripta, most evident on the left lobe; stomach adhered to the left lobe; this gave rise to a suspicion that an abscess in the liver opened into the stomach; on minute examination, a large cancerous ulcer was discovered within the stomach; its edges having adhered to the liver, prevented the contents of the stomach being effused into the cavity of the abdomen.

The other viscera did not appear altered in structure.

Observations.

Although this patient complained of symptoms

affecting his chest during life, yet, on dissection, no diseased appearance was observed in the cavity of the thorax.

The change of structure which led to dropsy, and which, independent of this symptomatic occurrence, hastened his death, was a schirrous or tuberculated condition of the liver and stomach. The schirrosity of the stomach had proceeded to cancerous ulceration, and it is well known how soon this form of disease proves fatal. Pain of the back, belly and loins, with the high red coloured urine, which tinged linen, a small weak contracted pulse, often characterize a truly schirrous liver. They should be distinguished if practicable from those pains which have their seat in the peritoneal covering of the liver, spleen and parietes of the abdomen; as the latter depend on chronic inflammation of these membranes, and as a very different mode of treatment is required in these distinct forms of disease, although dropsical effusion is equally the consequence in both instances.

CASE IX.

Laurence Mulhall, æt. 45. Oct. 10, 1817.—Abdomen very large, tense and containing a fluid; legs œdematous above 10 months; cough

and pain of sternum, with frequent pulse; urine red and scanty; was injured in his chest by falling, and being bruised in a mill; to this accident, in which he was much exposed to wet and cold, he attributed his illness.

He was directed venesection to ten ounces, on his admission, and a repetition of the same measure on the 19th, as he still complained of the severity of the pain in his chest.

The brachial artery was punctured in the operation of bleeding, and an aneurism became formed. On the 24th, the whole arm was enormously swelled and blackish; his dropsical symptoms had nearly disappeared.

He was removed to a surgical ward, where he died on the 20th of November.

Dissection, 21st November.

Thoracic viscera were healthy. Abdomen contained about 4 quarts of fluid of a pale straw colour, mixed with flakes of lymph; the liver, spleen and kidneys were healthy, but the stomach was one schirrous mass, except a small portion of the cardiac orifice. Omentum could not be discovered, except a small portion which partook of the disease of the stomach.

The small intestines were much thicker in their coats than natural, and covered externally with small white elevated spots.

The puncture in the artery was closed up, and the aneurismal pulsation had ceased 5 days before his death.

Observations.

Before this patient met with the accident which accelerated the dropsy, and hastened his death, it is probable, the schirrous state of the stomach and omentum were in existence. In themselves they would have ended in dropsy, had he been able to endure the change of structure in the stomach for any length of time.

It is curious to observe, that though this man complained invariably of his chest, on examination, the thoracic viscera were perfectly sound; the feeling of pain in the stomach was in fact referred to the sternum.

The injury he sustained by the fall, and by exposure to cold, appears to have induced a chronic inflammatory state in the membranes of the small intestines, which ended in the effusion of a fluid containing flakes of lymph, which are invariably considered the product of inflammation; the small

white elevated spots were depositions of lymph which adhered to the peritoneal coat.

So far as dropsy was concerned, this man was relieved from the greater part of the accumulated fluid; he died of mortification of his arm, but if he had even surmounted this supervening disease, he must have fallen ultimately a victim to the schirrous and cancerous state of the stomach and omentum.

It would appear, therefore, that dropsy occurred as the result of inflammatory action; that it nearly disappeared under an antiphlogistic and debilitating plan of treatment: and had there not existed permanent changes of structure in organs of the first degree of vitality, this man might have been cured. If a medical treatment, similar to that which was adopted, had been practised immediately after the accident, his chance of recovery would have been improved, at all events his life probably might have been prolonged.

The puncture of the artery was an unfortunate occurrence. The closing of the wounded vessel, or a spontaneous cure of aneurism, is singular, but it is not unprecedented.

CASE X.

William Tuite, æt. 24, a newsman, November 10, 1817. A relapse of general dropsy, both anasarca and ascites to a considerable extent; breathing much distressed, pulse hurried, urine scanty and red; no cough or local pain; he was cured of dropsy in September,* but returning to his intemperate habits, and being constantly exposed to cold and wet, the disease recurred.

He died on the 19th of December, having suffered severe pain in the umbilical region, and excessive distention for some days antecedent to his death. He would not submit to the operation of the paracentesis.

Dissection, 20th December.

Abdomen was enormously distended with fluid. On opening it, a portion of the omentum was found adhering, by recent exudations to the umbilicus.

Liver diminished in size, but tuberculated

* Vide case xxxiv.

throughout. The peritoneal membranes of it were coated with lymph, as well as those of the parietes of the abdomen.

Stomach healthy, intestines distended with air coats of the small intestines, were thicker than natural with effusion between their laminæ. Spleen somewhat enlarged; kidneys healthy.

Thoracic viscera in a sound state.

Observations.

Tuite's case is one of the most interesting in the collection, as he was twice subjected to medical treatment within a short space of time. In the first instance, his attack of dropsy, as will be seen in the sequel, was met with repeated venæsection, blisters and other antiphlogistic remedies. The result was, that he was completely cured.

In the second instance, although his disease did not appear more formidable, the result was unfavourable. The same active plan of treatment was not adopted. Too much reliance was placed on cathartics and diuretics; and though there were less decisive marks of inflammation, so far as could be collected from the symptoms, yet the appear-

ances after death shew, that there were not only old, but recent signs of inflammation.

Dropsy in this instance, might have occurred from two causes; a tuberculated liver, and inflamed peritoneal membranes. The tuberculated liver must have been of long standing, probably in existence antecedent to the first dropsical attack. The general hydropic state does not appear to have been established, until the other causes concurred, until the serous membranes of the abdomen were affected with inflammation; and when this inflammatory state was removed by the appropriate treatment, the serous effusion disappeared.

A man, however, of his intemperate habits, constantly exposed to the inclemency of the seasons, and exerting his organs of respiration, could hardly expect to escape a return of his disease; in fact he was already predisposed, and again subjected to the influence of the same exciting causes. The chronic inflammatory disease, which had been subdued by the treatment, returned with its attendant dropsical effusion. Matters being thus circumstanced, acute inflammation of the peritoneum supervened, in the umbilical region, a few days before his death, when the disease was too far advanced.

ced, and his strength too much exhausted, to submit to the measures suited to an inflammatory attack. The examination after death, clearly shewed recent inflammation in the peritoneum.

He refused to submit to the paracentesis, which was proposed to relieve the excessive and painful distended condition of the abdomen, having a firm reliance, that the same forms of remedies which he took before, would again afford him the desired relief.

The tuberculated liver, undoubtedly in itself, was sufficient ultimately to undermine his health, but his lungs were good; and with cautious treatment and temperate habits, this man's life might have been prolonged for a considerable time.

CASE XI.

Thomas Whelan, æt. 60. June 9, 1817, had been anasarcaous in the legs, and complained of cough upwards of a month; his abdomen swelled hard and tense within a fortnight before his admission; his pulse small, somewhat hurried; urine scanty, and red; disease attributed to exposure to cold.

Venæsection was practised twice in this case without making any impression on his cough,

which was unusually refractory. Blisters, blue pill, and cream of tartar were employed without any good effect; his swellings were first diminished, but there was a sudden increase on the 20th, and he died on the 27th June.

Dissection, June 28th.

Abdomen contained about a gallon of transparent, deep, straw-coloured fluid.

Peritoneum inflamed, its surface covering the intestines coated with a layer of lymph, especially in the epigastrium and on the surface of the liver. The liver was studded with small tubercles. The spleen enlarged to twice its natural size, and having on its surface small white tubercular spots.

Coats of the intestines were thicker than natural, from effusion of lymph between their luminæ.

Lungs sound, free from adhesions; aortic valves ossified.

An omental hernia on the right side. The omentum was adherent to the sac.

Observations.

In this case a complication of causes conspired

to give rise to a general dropsical state. Tuberculated liver, disease in the aortic valves, enlargement of the spleen, small tubercles on its surface, all these changes in structure must have subsisted for a considerable time antecedent to the effusion into the cavity of the abdomen and cellular substance; and yet they do not seem to have completed the hydropic disease, until a general inflammatory affection of the peritoneum took place. Cold was the exciting cause; it appeared immediately to induce that state of the exhalants on the serous membranes of the abdomen which favours effusion and dropsy. The layers of lymph on the peritoneum and surface of the liver, the change of structure in the coats of the intestines were unequivocal proofs of inflammation.

Without doubt, the tuberculated disease concurring with the condition of the heart, would in itself at no distant period give rise to dropsy, but this event was accelerated by the state of the peritoneal membranes.

But little hopes of success could be entertained in a case arising from a complication of such causes, and at such a period of life, and where organic changes of such importance had occurred.

CASE XII.

James Lawler, æt. 15. June 16, 1817. General anasarca, and considerable ascites of three months date; cough with mucous expectoration for four years; breathing distressed; lips livid, face pale, with a circumscribed purple spot on each cheek; pulse frequent, small, and irregular; urine scanty and high coloured; pains are felt occasionally in the chest.

His treatment consisted in the use of mild aperients with diuretics, calomel and blisters; anasarca swellings and enlargement of the abdomen were considerably reduced before his death, which took place on the 9th of July.

Dissection, 10th July.

Lower extremities anasarca; three pints of serous fluid, with flakes of lymph diffused through it, in the cavity of the abdomen; marks of inflammation were also observed in many parts of the cavity on the membranes, particularly on the surface of the spleen, and on the under surface of the liver.

Kidnies much enlarged and soft; lungs sound; apex of the heart connected to the pericardium by a membranous band; many spots on the surface of the heart, which resembled petechiæ.

Observations.

It may appear extraordinary when cough had subsisted for four years, with symptoms almost denoting a hectic state, that the lungs should be found unaltered in structure.

The distention, however, of the abdomen and the condition of the heart, were quite sufficient to explain the dyspnœa and cough; had the bronchial surfaces been minutely examined, other causes perhaps might have been discovered to account for the long subsistence of a catarrhal state.

A chronic inflammatory affection of the heart and its membranes had subsisted for a considerable time, as evinced by the adhesion and by the spots. Effusion was perhaps prevented from taking place into the pericardium, by the vicarious discharge from the mucous membranes of the lungs.

It was not then until a superadded inflammatory disease occurred in the membranes of the abdo-

domen, that the dropsical disease became established.

There are abundant proofs of the existence of inflammation both in the cavities of the thorax and abdomen, antecedent to the appearance of dropsy. It is evident there was but little to expect as to the removal of the disease, at the period when he was subjected to medical treatment, and where such material changes of structure had taken place in viscera of so much importance.

CASE XIII.

Alexander Mahood æt. 45, a discharged soldier, August 11th, 1817. Abdomen very large, tense, and evidently containing a fluid; no anasarca; cough; no dyspnoea; a sense, however, of oppression. Pulse frequent and full; urine scanty and red.

Disease has been present fourteen weeks; he attributes it to cold and fatigue in military duty; has drunk spirits intemperately.

Venæsection was twice used, and blisters applied, without affording any relief to his cough; diuretics, and alterative mercurials did not increase the secretion of urine, or make any im-

pression on his swellings. He died on the 8th of September.

Dissection 9th September.

The liver was tuberculated and much enlarged; its peritoneal covering thickened and exhibiting marks of inflammation.—The Peritoneum lining the parietes of the abdomen was likewise inflamed; a considerable quantity of a serous fluid, with flakes of lymph, was found in the cavity of the abdomen.

The thoracic viscera were in a healthy state.

Observations.

Dropsy, in this instance, as in others of those already related, depended partly on the tuberculated liver, and partly on the inflamed serous membranes in the cavity of the abdomen.

The cough and tuberculated liver were in existence long before the hydropic effusions had taken place. Spirituous potation, concurring with a certain predisposition, is one of the most frequent exciting causes of the true schirrous liver, of which this is an instance—a disease, there is

reason to believe, which is never radically cured : even the dropsy, which is symptomatic of this, almost invariably returns after an apparently successful medical treatment. Dry cough and high red urine, are generally characteristic of a tuberculated liver, and attendant dropsy. The inflammation, however, of the membranes of the peritoneum, attributed by the patient to cold, was the circumstance which hastened and completed the dropsical effusion. At the time he was subjected to medical treatment, no plan probably would have succeeded ; it is doubtful whether the powers of medicine could avail any thing, had they been applied when the swelling first appeared, considering the condition of his liver, in addition to the other occasional causes of dropsy to which he was exposed.

CASE XIV.

John Shawe, æt. 60, November 14th, 1817— a very intemperate man, who procured bodies for dissection, had repeated returns of ascites within the last two years ; they were generally removed by purgatives, by jalap in particular, according to his account.

His first dropsical attack came on with cough

and hoarseness ; his last illness was present six months ; it was preceded by a paralytic attack, during which he lost his speech, from this state he was restored by arteriotomy ; his abdomen is now very large, and general anasarca prevails ; breathing oppressed ; pulse moderate ; bowels costive ; urine red. A syphilitic eruption is likewise observable all over his body.

A single venæsection was practised with a view to relieve his breathing ; purgatives and mercurials were directed. He died, however, on the 21st November, in an attack of apoplexy.

Dissection, November 22nd.

Abdomen contained a considerable quantity of fluid ; liver hard, tuberculated, but very much shrunk in dimensions.

Peritoneal covering of the liver coated with lymph.

Vessels on the arachnoid and pia mater were turgid, and a slight effusion of serous fluid had taken place in the ventricles of the brain.

The thoracic viscera were healthy.

Observations.

So long as the dropsy in this case was merely symptomatic of disease in the liver, not very far advanced, it admitted of partial and temporary relief under the administration of cathartics and diuretics; and had this man's intemperate habits been corrected at an early period of his disease, the result might have been different. It is to be presumed, as his illness came on with cough and hoarseness, that there was at least a temporary congestion in the pulmonary organs, as well as in the membranes of the abdomen. But the constant excitement given to the digestive organs, and to the brain by drinking ardent spirit, concurring with exposure to cold, induced a kind of general inflammatory diathesis; this terminated by effusion in the brain from the exhalants giving rise to a sub-apoplectic state; and in the abdomen ascites was the result.

This case then may be considered, like many of those which precede it, as originating in an inflammatory state. This appears clearly from the condition of the peritoneum, and the effusion of lymph on the surface of the liver.

The connection between apoplexy and a dis-

eased condition of the liver is also well illustrated in this instance.

The syphilitic disease must be considered another difficulty in attempting to remove this complicated morbid state.

CASE XV.

John Murtagh, æt. 29, a butcher, April 3, 1818; sallow and emaciated; much addicted to drinking ardent spirit; enormous œdematous swellings of the lower extremities for 12 months; ascites had supervened within the last three weeks; cough and soreness, with flying pains in his chest and abdomen; pulse frequent, small and hard; urine scanty and high coloured; attributed his illness to cold.

Venæsection was directed; it was not practised, as a profuse nasal hæmorrhage came on after the visit; he was slightly relieved by the paracentesis, which was performed on the 9th; but he died on the 16th of April.

Dissection, 17th April.

Abdomen was full of a yellowish serous fluid.—Liver tuberculated throughout; some of the mesenteric glands were enlarged and indurated. Pe-

ritoneum lining the parietes of the abdomen thickened and very vascular, about the iliac region especially; reflections of that membrane over the stomach and intestines much thickened, as well as their muscular coats, seemingly by the intermediate deposition of lymph as well as a serous fluid.

Observations.

This case presents another instance, where traces of inflammation are perceivable to a considerable extent in the peritoneal membranes. They were thickened and more vascular than is usual; the appearance of the intestines themselves is worthy of attention. They were not only thickened by an adventitious membrane, the product of a deposition of lymph between their coats, but there was even an effusion of serum, or a true œdema of the cellular substance connecting their laminae. This appearance has already been observed in some of the preceding cases, and is certainly the result of chronic inflammation.

It is unnecessary to dwell upon the tuberculated condition of the liver and mesenteric glands: these are admitted amongst the occasional causes of dropsy.

It may be perceived that cough and flying pains

in the thorax do not uniformly denote change of structure in the thoracic viscera; the liver, as is well known to most practical physicians, is often the source of these sensations and symptoms.

It is probable in this instance, as in the other similar cases, that the tuberculated liver was in existence long before the appearance of the general anasarca and ascites; and it was not until the serous membranes of the abdomen became inflamed, that the dropsical disease was completed.

The connection between an obstructed condition of the liver, and the state of the circulation in the head, is well illustrated by the occurrence of nasal hæmorrhage in this patient.

The dissection shews how little medical treatment could avail in a case where there was so considerable a change of structure in the liver and serous membranes of the abdomen.

The diseased appearances and changes of structure which take place in the different variety of dropsical diseases, having been illustrated by the preceding fatal cases and dissections, according to the plan proposed, it is necessary to join a short account of those patients who died, but were not examined after death: they are only six in

number, but they will serve to complete the histories of all the fatal cases which occurred within the year.

CASE XVI.

Patrick Fitzgerald, *æt.* 50, May 19, 1817, was admitted in the last stage of emaciation, with very general anasarca and ascites; severe cough; laborious respiration; irregular and intermitting pulse; palpitation and faintness. He had long complained of cough and dyspnæa, but the dropsy was only of 9 weeks date. It was obvious that the heart was the organ in fault, and, as he attributed his dropsy to cold, it is probable that the chronic disease of his heart was augmented by an increase of inflammatory action in that viscus and the pericardium, that effusion was the result; and in this way the sudden developement of dropsy may be accounted for.

Efforts were made to relieve his breathing by blisters, and by diuretics with cordials; but he died on the 12th of June.

CASE XVII.

George Symes, *æt.* 32, October 10, 1817. Both

anasarca and ascites to a considerable degree, with cough and oppression of breathing of four months duration, attributed to exposure to cold; pulse frequent; urine clear and in sufficient quantity.

Ten ounces of blood were taken, and a blister applied to the chest.

His cough and dyspnæa being still urgent, the venæsection was repeated on the 17th.

Mercurials also in combination with diuretics, were prescribed.

On the 20th his mouth was sore, but his dropsy was removed. A favourable issue of his complaints was naturally expected; unfortunately the soreness of his mouth, although he had taken blue pill only 10 days, had increased so much on the 27th, that inflammation of the whole face took place; the eyes were closed; mortification of the teguments of the face followed; and he died on the 6th of November.

CASE XVIII.

Anne Rorke, *æt.* 62, a cook, January 26, 1818; a large woman, who had been dismissed cured in the month of November, was re-admitted, generally anasarcaous, and with considerable ascites,

dyspnœa, severe cough, small oppressed pulse, high coloured scanty urine.

The same aperients and diuretics which had succeeded before, were directed, but without effect: on the 29th, her breathing was very laborious; her countenance livid. Ten ounces of blood were ordered to be taken—it was not practised; effusion shortly after this appeared to have taken place into the cellular substance of the lungs; she died 13th February.

CASE XIX.

John Rogers, æt. 60, December 15, 1817, apparently moribund, pale, emaciated, with extreme dyspnœa; countenance livid, pulse scarcely to be felt.

Ascites and anasarca present to a considerable extent, of only seven weeks date; swellings came on, after exposure to cold and wet whilst at work; wine and cordials were administered; but he died the following day.

The inflammatory nature of this case is obvious from the causes, from the symptoms, and from the manner in which it came on. The result of the

total neglect of timely medical aid, may be also noticed.

CASE XX.

Ann Pratt, æt. 50, January 29, 1818—very general anasarca, and ascites, cough, dyspnœa, lividity of countenance; pulse strong and full, urine scanty and high coloured—disease ascribed to cold—it was only of a fortnight's duration. Venæsection was directed, with squill, digitalis and calomel; she would not allow herself to be bled; a blister was applied.

On the 1st of February, venæsection was again proposed—she would not consent to it; she died suffocated in the evening.

The inflammatory nature of this attack was evident—she appeared to die more from a neglected pneumonic disease, than of dropsy.

CASE XXI.

Laurence Kennedy, æt. 29, a schoolmaster, Nov. 21, 1817—a tall, pale, slender man, accustomed to drink spirits; has had ascites to a great extent for 10 months: this came on after an ague; his legs have been anasarcaous for 2 months, and

within these few weeks, cough and pain of chest have supervened; pulse frequent, tongue loaded, and olive coloured; urine scanty and red.

The cough and pain of chest were removed on taking ten ounces of blood; severe pain, which afterwards occurred in both hypochondria, were somewhat alleviated by cupping; in other respects, the medical treatment was ineffectual. He died on the 8th of December.

The liver and spleen were probably deranged in their functions, after the ague; to this, organic changes in the structure of these viscera succeeded; next, ensued inflammatory attacks in the thoracic viscera, and in the serous membranes of the abdomen, with attendant dropsical effusion. Throughout the whole career of this case, more or less of inflammation was always present; but the changes of structure were too serious, and too considerable to be influenced by remedial treatment, at the period he came into the hospital.

From the detail of the preceding cases, it may be fairly inferred, that in many dropsical diseases, inflammation of some important organ, or of some texture, either is present, as the cause of the disease, or supervenes in the course of its pro-

gress, and may be considered as a material aggravation; it presents, therefore, additional obstacles to the practitioner, in attempting a radical cure. It is by no means meant to inculcate the idea, that inflammation is invariably the cause of dropsy; that disease may be present, without an inflamed state of any organ or texture, as may be easily proved by anatomical research. In many instances, in incipient dropsies, sanguine congestion in the lungs, liver, spleen, and other organs is present, especially in the venous system of these viscera; and this congestive state, to adopt the language of Dr. Armstrong,* often leads to effusion. In this state, purgatives with abstemious diet, will frequently relieve the patient, more particularly, if the congestion is in the viscera of the abdomen. If the congestion is in the lungs, venæsection may be advisable, although no inflammation may be present; for it is material to relieve that important organ, and to prevent the habit of a serous secretion into the bronchia, by which means, humoral asthma may be established, and dropsy be the result. But if this congestive state is allowed to subsist, should medical treatment be neglected, inflammation will supervene from mere distention of the vessels; effusions of serum, and lymph will follow; adhesions and false membranes

* Armstrong on Fevers.

will be formed on the surface of the serous coats, in the different cavities, and thus additional difficulties are thrown in the way of the practitioner. In the first instance, he has only a disease of *function* to correct, in the second, a disease of *structure* to contend with.

It is very desirable to establish accurate diagnostics on this subject; to suit our plan of cure to the congestive or inflammatory state, as either of these may lead to dropsy; or merely to regulate the serous secretions, upon the disturbance of which some slight effusion may have taken place.

The following histories of dropsical diseases are offered with a view to illustrate these points; but more especially to endeavour to throw some light on the line of practice which should be adopted in each variety of these diseases. It will be easy, after a perusal of these histories, to see if facts collected to that extent, afford any just data for the treatment of a class of diseases, so considerable a proportion of which terminate fatally under the ordinary routine of practice.

CLINICAL REPORT

ON

DROPSIES.

PART II.

CASES SUCCESSFULLY TREATED.

CASE XXII.

JOHN BISHOP, æt. 24. June 6, 1817.—a stout muscular man, came in affected with anasarca of the legs, thighs, scrotum and cellular substance of the body; his abdomen considerably distended and fluctuation evident. Headach, cough, pain of the back and belly, pulse 80; urine scanty and high coloured—swellings have been present only a fortnight—they were attributed to cold. Twelve ounces of blood were taken from the arm, and an opening electuary directed. The blood was buffy, and he experienced relief in his cough and pains.

On the 9th, the swelling of the scrotum had

disappeared; his abdomen was slacker and legs less swelled, urine more abundant and less loaded; venæsection was repeated to ten ounces. On the 19th, the swelling was altogether gone. On the 16th, there was no return of dropsy; he complained only of a slight cough and a feel of soreness in the lower belly.

Small doses of blue pill and an aperient mixture, with senna, were directed. On the 20th, as he still complained of this soreness, and as the epigastric region felt hard and tender to the touch, ten ounces of blood were taken from the arm, and a large blister applied over the epigastrium, whilst his medicines were continued: the blood was buffy, but all uneasiness was removed on the 27th, when he was discharged perfectly cured.

Observations.

The character of this dropsical disease appeared to be so evidently inflammatory, that no other remedies were directed in the first instance, except the blood-letting and the aperient electuary. The inflammatory action was probably seated in the peritoneum, as denoted by the pains in the back and lower belly; the headach and increased frequency of pulse, with the appearance of the blood drawn, shewed that a symptomatic pyrexia

attended the inflammatory disease. After two blood-lettings, the dropsy disappeared, but it was not until after the third venæsection, that the soreness and fullness of the epigastrium were removed. This appeared to be seated in the peritoneum. The blister after the third bleeding seemed very decisive in the removal of those symptoms, which were supposed to depend on chronic inflammation.

The quantity of inward medicine given in this case was very inconsiderable.

CASE XXIII.

Patrick Reilly, æt. 40. June 3, 1817.—a thin sallow man, with a livid countenance, addicted to intemperance, came in affected with very general anasarca and considerable ascites—it had subsisted only 10 days; he complained of pain in his chest, with distressed breathing; his pulse frequent and small, urine scanty and high coloured.

Ten ounces of blood were taken, and an aperient mixture directed—the blood was not buffy. On the 16th, the swelling was diminished, his breathing continued distressed, and his countenance livid: tinct. of squill and digitalis were directed; on the 20th, scarce any swelling; he is so weak as to remain in bed: diuretics omitted.

23d.—Dropsy altogether gone; countenance improved; is still affected with cough and dyspnoea.

27th.—Left the hospital free from dropsy, and much recruited in his general health, but apparently suffering from some organic disease of the heart.

Observations.

Chronic inflammation is generally supposed to be the cause of enlargement of the heart, and of other diseases of structure in that organ; when those organic changes have taken place, dropsical effusion mostly follows. A recurrence of inflammation is not uncommon; indeed it often returns in a more severe form. It is not surprising that textures which have already been enflamed, should again readily take on them the same diseased modes of action, when the occasional causes have been repeatedly applied. This point has been already illustrated in some of the fatal cases,* and it seems to have been the case to a certain extent in the present instance. The concurring occasional causes of cold and intemperance excited an inflammatory affection in some texture near the heart, which terminated in effusion.

* Vid. Case III.

The history of this case would lead us to believe that this inflammatory action in the heart had not occurred for the first time in this recent illness.

The power which venæsection shews in arresting the progress of dropsical effusion, connected with chronic inflammation, is well illustrated in this instance, even though it had to contend with a disease of structure in addition to inflammation and dropsy.

This patient was very soon relieved from the accumulation of fluid which was considerable, and with a very small portion of inward medicine.

The tincture of squill and digitalis was only administered for a few days, but they appear to have acted with great advantage after the inflammatory symptoms had been subdued by venæsection.

CASE XXIV.

James Delahunte, æt. 34, a sailor, July 11, 1817, a strong muscular man, with considerable ascites, and very general anasarca of six months date; affected also with cough, pain in his chest, pulse 80, full and hard, urine pale, and does not coagulate with heat; is subject to epilepsy, since he received a wound from a splinter on board ship.

Disease attributed to exposure to cold, fatigue, and intemperance.

Blood was immediately taken to the extent of 12 ounces, and electuary with cream of tartar and jalap directed: on the 18th, although his cough was easier, his pulse softer, and his swellings somewhat diminished, venesection was repeated to ten ounces; blood was buffy in both instances; a third bleeding was practised on the 21st, as he still complained of his chest, although his pulse was natural, his skin soft, and the swelling still more on the decline.

A fourth venesection was practised on the 25th, and a fifth on the 28th. He bore all these bleedings well, and expressed himself much relieved by each repetition.

On the 4th of August, the anasarca having nearly disappeared, and the ascites being much reduced, a hardness and tenderness on the right hypochondrium was observed.

A blister was applied to the right hypochondrium, pills with squill, digitalis and calomel directed with the occasional use of the electuary. His mouth became sore, the fullness and tenderness in the region of the liver soon went off, and he was discharged perfectly cured on the 8th of September.

He had no epilepsy during his residence of two months in the hospital.

Observations.

In this case some of the textures of the lungs appear to have been inflamed, the liver in a state of sanguine congestion, its membranes probably inflamed, and the whole peritoneum exuding a serous fluid.

This condition of excitement and over-activity in the exhalants of the abdomen appears to have been arrested by the detractions of blood; but it was not until after the fifth venesection, and after the loss of 52 ounces, that full relief was obtained as to the pectoral symptoms.

He was not pressed with much inward remedies until the inflammatory state had been fully subdued; he was a month in the house before the combination of squill digitalis and calomel was directed. This seemed to shew very beneficial effects.

It may be observed that the mercurial course to which he had been subjected before his admission was quite inoperative in removing his disease; it probably was rather an aggravating circumstance, where too much excitement already existed; and where inflammation was actually present, mercury

proved prejudicial by adding to the excitement, and increasing the inflammatory diathesis.

It may be noticed with what advantage mercurials often act, in many diseases, after detractions of blood; indeed they often fail for want of the proper preliminary treatment in this way.

It is well known also how much better squill and digitalis act, after patients have been subjected to a depleting plan of treatment, according to the observations of Withering. This point seems to have been illustrated in the preceding case.

The utility of blisters in preventing increased exhalation, and in disposing of effused fluids, may also be observed.

The cessation of his epileptic disease during the progress of the medical treatment is likewise worthy of attention.

CASE XXV.

Edward Clinch, æt. 18, a country lad—pale, with livid lips, and circumscribed purple spot on the cheek, but not emaciated; anasarca in the face, legs and thighs, with considerable ascites; affected with palpitation, and slight dyspnoea; pulsation evident in the region of the heart; urine

natural; complaints have been present twelve months; limbs swelled after exposure to cold.

Ten ounces of blood were taken from the arm, from which he expressed great relief. Squill digitalis and calomel, with an opening electuary were directed. On the 13th, the calomel was omitted; the diuretics were continued. On the 17th, the swellings were reported to recede; there was less palpitation, but still pulsation in the left side of the thorax; a blister was applied to the region of the heart, whilst the other remedies were continued. He was discharged, cured of dropsy, on the 24th. The pulsation and palpitation were occasionally observed.

Observations.

This may be considered to be a case of chronic pericarditis, combined with an aneurismal state of the heart, and which terminated in effusion. The diagnostic already stated of œdema of the face may be observed here, and did assist in forming a prognosis, as well as in directing the plan of cure. But the causes of dropsy in all probability were not confined to the thoracic cavity. Venæsection relieved the heart and its membranes from any chronic inflammation; the brisk purgative unloaded the liver and the organs of digestion; after these preliminary measures, the digitalis and squill shewed their legitimate effects.

This patient, however, must be considered as very liable to relapses of dropsy, when any of the usual exciting causes are applied.

CASE XXVI.

William Murphy, æt. 23, October, 10th 1817; a vigorous middle-sized man; a fortnight before his admission was seized with oppressed breathing, cough, hoarseness and palpitation; his face became cedematous; his abdomen next swelled; and lastly, an anasarous state of his legs and thighs followed; his pulse was 80; bowels regular; urine scanty and high coloured.

On his admission, ten ounces of blood were taken; and an electuary with cream of tartar directed. On the 13th, twelve ounces more were taken with evident relief to the pectoral symptoms; squill, digitalis, and calomel were prescribed in addition.

On the 17th, a further venæsection of 10 ounces was practised, an increase of hoarseness and cough having occurred from fresh exposure to cold; at this time all his swellings were much diminished. On the 27th, his dropsical symptoms had altogether disappeared; his respiration was impeded and the urinary secretion restored; his mouth was

slightly sore. On the 3rd of November he took a warm bath; and on the 10th, he was discharged perfectly cured.

Observations.

A very formidable disease appears to have been subdued in a very short space of time. The view that was taken of this case was, that both the heart and lungs were the seat of subacute inflammation, which had given rise to effusion, and which probably would have ended in change of structure in these organs, had not a very active treatment been resorted to. That the heart was attacked appears from the palpitation, and oppression with symptomatic fever. There was probably no disease of the valves, or the pulse would not have been regular.

That the lungs were concerned is plain, from the hoarseness, cough and impeded respiration; it should be noticed that after each bleeding, independent of the relief afforded to the thoracic viscera, there was a diminution of the dropsical swellings.

CASE XXVII.

John Redmond, æt. 29, a servant, October, 27th, 1817. Legs have been anasarous, and

abdomen much swelled for six months; has had cough and dyspnæa for twelve months; face pale; pulse frequent and small; bowels slow; urine clear, and does not coagulate with heat. Disease came on with cough and spitting of blood, with alternate heats and chills, and with high coloured and scanty urine after exposure to cold, and having been intemperate.

Ten ounces of blood were immediately taken, and an opening electuary directed.

November 3d, dropsical swellings were nearly gone; he still complained of pain and oppression about the heart.

Ten ounces more of blood were taken, and the electuary continued.

November 7th, being perfectly free from pectoral distress, and from dropsical symptoms; he was discharged, cured, on the 10th of November.

Observations.

It is evident in this instance that dropsy was symptomatic of disease in the viscera of the thorax, which had been long in a state of chronic inflammation.

It would have been vain to have attempted the cure of this dropsical disease, on the ordinary plan, by purgatives, diuretics and mercurials. Indeed the short period in which this very threatening assemblage of symptoms was subdued, shews that the mode of treatment adopted was well suited to the removal of the disease. Scarcely any remedies were employed in addition to the detraction of blood, except that attention was paid to the state of the bowels. This case then well illustrates the power of venæsection in the cure of dropsies, connected with disease in the pectoral organs; and it holds out encouragement not to despair of removing dropsy, although it may have subsisted for the period of six months.

CASE XXVIII.

Owen M'Cabe, æt. 50, a labourer. Feb. 9, 1818: A tall sinewy man, is anasarcaous all over, and ascites is present; he has a cough, oppressed breathing, an intermitting pulse, scanty high coloured urine, and a circumscribed purple spot on each cheek. Dropsy has been present six weeks—cough and dyspnæa he has had a considerable time. Disease is attributed to cold and hard labour. He was directed a bleeding of ten ounces, a blister to the chest, and an opening electuary; a second blister was applied to his back a few days

subsequent; squill pills, with digitalis and calomel, were also prescribed.

On the 9th of March, swellings were gone, except from his legs; the oedema shifted from his lying in bed, to his right thigh, which became erysipelatose; at this time his palpitation was distressing, his pulse intermitting, and his strength much reduced. Infusion of gentian with acetum colchici was directed. March 30th, erysipelas of the thigh has suppurred extensively; it has been opened, and a purulent discharge, above two pints in quantity, has been drawn off.

April 13th.—Dropsy gone; erysipelas has disappeared; palpitation continues.

May 10th,—Discharged cured.

Observations.

This case appeared almost hopeless in the first instance, and completely so when the extensive erysipelatose inflammation attacked the oedematous limb.

Erysipelas is a frequent attendant on those dropsies, which depend on an aneurismal state of the heart, especially where the valves are diseased, as in this case; but the result is almost uniformly fatal.

It is not easy to say what influence the blood-letting might have exerted on the erysipelas, or how it might have varied the usual progress and termination of so dangerous a complication of diseases.

The dropsy was going off when the erysipelatose inflammation of the cellular substance of the thigh occurred; but there appeared to be great relief afforded to the pectoral organs, as if by the conversion of one disease into another perhaps not less formidable. Again, when there was a cessation of the suppurating erysipelas, the palpitation and dyspnœa were more distressing; the dropsy, however, did not return, although this man was kept in the house for a considerable time after.

There is reason, however, to apprehend the dropsy will return, whenever the occasional causes are again applied.

The history of this case shews that dropsy was only symptomatic of the state of the pectoral organs; a chronic carditis seemed to be present along with an aneurismal condition of the heart, and effusion was the result.

We cannot say how far the powers of life will

endure changes of structure in important organs, but we know in many instances, that partial relief will arrest the progress of destructive maladies : hence arises the value of palliative treatment, where a radical cure is quite impracticable : life is thus often prolonged under the pressure of urgent diseases, and human suffering much diminished ; of this, the case before us affords a most striking illustration.

CASE XXIX.

Hugh Fitzpatrick, æt. 40. March 2, 1818.—Legs and thighs are very hard and œdematous ; abdomen quite full and distended—is teased with cough and soreness of his chest, chiefly about the heart ; pulse moderate, urine scanty, frequent epistaxis ; symptoms are present five months ; they came on after a fall into a deep ditch, where he suffered from wet and cold.

Ten ounces of blood were taken, and a cathartic electuary prescribed ; he felt immediate relief in his chest after the venæsection.

On the 9th, his swellings had diminished, and the urine had increased.

Pills with squill, digitalis and calomel, were directed.

On the 13th, the calomel was omitted, it having appeared that mercury had been tried to salivation before his admission.

Tinct. of squill and digitalis were substituted. On the 16th, his stomach being disordered, and vertigo having occurred, infusion of gentian, with acetum colchici, were given instead of the tinctures. He used the warm bath a few times ; his swellings altogether disappeared, and he was discharged, cured, on the 4th of May.

Observations.

Dropsy occurring after a fall or an injury, seldom promises a favourable result, especially after having been four months established. Immediate relief was afforded to the pectoral organs by the venæsection, and freedom of function was promptly restored to them. The secretions were re-established without much exertion, and the dropsical accumulation soon disappeared. It is easy, therefore, to infer, as well from the causes which appeared to induce this disease, as from the treatment adopted, that it was inflammatory in its commencement, and that even after four months had elapsed, it was not too late to resort to those remedies, which are considered the most efficient in local phlegmasiæ.

CASE XXX.

Valentine Reilly, æt. 20.—April, 24, 1817. Face, legs, thighs and body are anasarcaous, and abdomen affected with ascites; cough, and dyspnœa are present, with a small indistinct pulse; has no local pain—urine natural—cheeks flushed—complaints are ascribed to cold; they are of nine weeks date.

He was first tried with a cathartic electuary, and with squill, digitalis and calomel, in combination: these having made no impression, venæsection was practised on the 30th of April, and again on the 2nd of May; after this the swellings soon disappeared, and he was discharged, cured, on the 22nd of May.

Observations.

There is reason to believe the complaints in this instance are fairly attributable to an inflammatory origin; the heart appeared to be the organ which suffered most; it was probably in a chronic inflamed state on his admission into the hospital; it is important to observe, that it was not too late to resort to venæsection, even after the trial of other methods of cure.

CASE XXXI.

Anne Conlan, æt. 30, married, November 17, 1817. Abdomen very large, with evident fluctuation; legs, thighs and pudenda anasarcaous; looks pale; swellings of a fortnight's date; cough, with considerable dyspnœa, pulse frequent and hard; tongue white, urine high coloured and scanty—bowels slow; no catamenia for 5 years, when she had her last child. Disease ascribed to cold.

Venæsection to ten ounces, an opening electuary, and tincture of squill and digitalis directed. On the 21st, there was a considerable diminution of the anasarca, but there was pain under the sternum, with oppressed breathing.

Venæsection was again directed, and a blister to the chest, the other remedies being continued.

On the 24th her pectoral symptoms were relieved, and her swellings almost gone. She was discharged cured, on the 1st of December.

Observations.

The concurrence of dropsy in this instance, with an inflammatory disease of the chest, is so evident, that it is unnecessary to dilate on it. It

may be observed, in how very short a period of time this patient was restored to health, under very unpromising circumstances; and how small a portion of inward remedies were required, after the venæsections and the blister. She had, however, the advantage of early medical treatment, compared with other patients.

CASE XXXII.

Rose Keegan, æt. 50, July 21, 1817. Pale and sallow, with cough, dyspnæa, and loss of rest for five weeks; became anasarous, within the last week: abdomen full, pulse small, not frequent, urine scanty and red, bowels slow; catamenia had ceased for four years.

Blood-letting to ten ounces, and a blister to the chest were immediately resorted to; tincture of squill and digitalis, with an opening electuary were directed; she experienced immediate relief in her chest, and the dropsy soon disappeared.

August 1st, her stomach became much disordered from the digitalis and squill. These symptoms were settled by infusion of spearmint, with soda and lemon, taken in effervescence; and by the

assistance of some light cordials, her strength was soon restored.

She was discharged, cured, on the 11th of August.

Observations.

It is material to observe here, that chronic inflammation, which appears to have subsisted for five weeks, was not denoted by any marked, febrile, or inflammatory symptom; there was no acceleration of pulse; effusion, however, was going on during that period. It may be remarked how very soon a removal of the dropsical disease took place, under symptoms of unusual apparent debility, and whilst she was subjected to a depleting and debilitating treatment.

There can be no doubt, therefore, of the inflammatory nature of the disease in the case before us; but this patient had the advantage also, as in the last instance, of very early medical treatment.

CASE XXXIII.

Margaret Morgan, æt. 28, January 9, 1818, was attacked three weeks before her admission, with severe cough, oppressed breathing, and pain of chest; to these succeeded pains in her legs and thighs, which afterwards became anasarous; pulse frequent, urine red and scanty.

Ten ounces of blood were taken, and a pectoral mixture ordered.

On the 12th, a blister to the sternum—her swellings had already begun to diminish.

On the 30th, venesection was again directed, her cough and pain of chest having rather increased.

On the 9th of February, venesection was practised a third time, her cough being still obstinate, and some blood having been spit up. Tincture of digitalis was prescribed.

February 20, dropsy had for some time quite disappeared; the pectoral symptoms were removed. Discharged cured.

Observations.

The dropsy was nearly gone after the first bleeding and the blister; there was more difficulty in subduing the pectoral disease, which appeared to be evidently inflammatory. The pains felt in the integuments of the legs and thighs, antecedent to the œdema in the cellular substance of the limbs, is worthy of notice; it appeared to arise from an inflammatory affection of the membranous tissue constituting the cellular substance,

which preceded the effusion of fluid, from the exhalants into those cells. General anasarca may occur in this way from cold, independent of any visceral disease, but this form of dropsy is rare; it occurs sometimes in this way after scarlatina, and the other exanthemata. In the case before us, however, dropsy was chiefly symptomatic of disease in the thoracic viscera.

CASE XXXIV.

William Tuite, æt. 24, a newsman, May 23, 1817—a strong muscular man, addicted to drink ardent spirit; became affected with very general anasarca seven months before his admission; ascites of the abdomen also of unusual size, which is tender on pressure all round; cough and pain of chest are likewise present; pulse moderate; urine scanty and red; has been constantly exposed to severe weather.

A bleeding of 12 ounces, 4 grains of calomel, and an opening electuary were directed.

A second bleeding of 10 ounces was practised, on the 6th of June. Blood was buffy in both instances; his chest was relieved; the tenderness in the abdomen was gone; on the 9th, blood was ta-

ken a third time ; after this the swellings were a little reduced ; on the 13th, the œdema had left his legs ; the abdomen was softer.

On the 20th, his mouth was sore ; calomel omitted ; tincture of squill and digitalis directed.

On the 23d, still further reduction of the swellings.

30th, Return of pain in the right side ; reduction of the swellings is however progressive ; a fourth bleeding of 10 ounces directed.

July 4th, anasarca gone ; enlargement not altogether removed from the abdomen ; blisters were used in succession to the different parts of the abdomen.

On the 22d, he was discharged, cured ; he used warm baths frequently with advantage, during his convalescence.

Observations.

The sequel of this case has already been given.* Tuite became again dropsical, died, and was examined, as related before. That the disease was inflammatory at the time this patient re-

* Vid. Case x.

lapsed, has been ascertained by the appearances after death ; that it was equally so in his first illness, appears probable as well from the symptoms as from the mode of treatment.

There were sufficient signs of membranous inflammation in this his first attack ; the pains in his side, and the tenderness in the abdomen on pressure sufficiently denoted it. The palpable relief that followed each detraction of blood was very striking ; and the diminution of dropsical swelling seemed to keep pace with the abatement of inflammatory symptoms.

The inflammatory action appeared disposed to attack some of the textures in the thorax, but it was arrested by the treatment.

It is important to observe the effects of the last venæsection. On the 30th, symptoms of a recurrence of inflammatory action appeared at this period, but the detraction of blood effectually put a stop to it.

This man was kept a long time in the hospital, in the hopes of making him avoid the occasional causes of his disease as long as possible. Indeed to complete the cure of dropsy, a considerable time should be dedicated, to allow inflamed and altered textures to regain their healthy condition.

In his second and last attack, there is reason to believe, had he been treated boldly with the lancet, he might have again surmounted his disease; his strength on his readmission had not failed, but the absence of cough and of the local pains in the abdomen, which was so striking on his first illness, decided the point against venæsection; and yet we find that he died chiefly from acute inflammation of the peritoneal coat of the omentum; a chronic inflammatory condition had probably long existed in a masked and obscure form. This case is instructive as to the pathology of dropsy, and it throws no small light on the treatment of such diseases, when they are not of very old standing.

CASE XXXV.

Hugh Carroll, æt. 40, a countryman, July 25, 1817—a strong man, affected with ascites to an unusual extent, attended with pain on pressure, of a month's duration; no anasarca, pulse frequent, skin hot, tongue white, urine scanty, not red, bowels slow; ascribes his disease to cold.

Venæsection was practised to 12 ounces on the 25th, and to ten on the 28th, and a cathartic medicine with senna directed.

On the 1st of August, a large blister was applied

to the epigastrium; on the 15th a second, and on the 25th a third to the same region; he also took small doses of blue pill and cream of tartar.

He was discharged perfectly cured on the 19th of September.

Observations.

The serous membranes investing the liver and adjacent organs appear in this instance to have been the seat of disease, and to have furnished the fluid which gave rise to the ascites. The treatment was very simple; after the second bleeding, the pains had left his abdomen, denoting that they had been inflammatory. The blisters in succession removed all hardness and congestion from the epigastric region.

The good effects of repeated blistering after venæsection, in other cases of membranous inflammation, are generally admitted; and they are well illustrated in this instance as to the connection which subsists between dropsy and peritoneal inflammation. They may be supposed to diminish exhalation and increase absorption.

CASE XXXVI.

Sarah Holt, æt. 35, October 10, 1817—a pale sallow woman; her abdomen extremely large; tense and sore on pressure; legs anarsarcous; pulse

small and frequent; urine scanty and high coloured; disease came on with purging and passing of blood by stool; it has subsisted for a month. She ascribes it to cold and bad food.

Her medical treatment in the hospital, which occupied four months, consisted of four general bleedings, cupping repeatedly to different parts of the abdomen; according to the seat of the local pain, a succession of blisters on different parts of the abdominal surface.

She was first given blue pill, with opium and castor oil, until her dysenteric symptoms were removed, she was afterwards subjected to the influence of squill digitalis and colchicum at different periods; jalap, and cream of tartar were also administered occasionally. She was discharged, cured, Feb. 21, 1818.

Observations.

The mucous membranes of the intestines appeared first to have been diseased; the inflammatory action afterwards extended to the serous membranes of the abdomen, and effusion was the result. Chronic peritonitis was the chief disease; dropsy was symptomatic; by subduing the phlegmasia, the hydropic disorder was removed, by

putting a stop to the increased secretion from the serous membranes.

CASE XXXVII.

Owen Sweeney, æt. 40. Aug. 4, 1817. Abdomen very large, tense, elastic, sore to the touch, and containing a fluid; anasarca of the legs; urine scanty, and high coloured; cough occurs occasionally; disease of six weeks duration; he has been exposed to cold, and has been very intemperate.

His medical treatment consisted in two general venæsections; blisters repeated at intervals to the abdominal surface; an aperient electuary, with cream of tartar, and the warm bath occasionally. He was discharged cured the 3d of October.

This man had the epidemic fever, from which he recovered in April 1818; he had no recurrence of dropsy.

Observations.

Chronic peritonitis appears to have been the primary complaint in this instance, induced probably, by intemperance and exposure to cold; effusion, as has been well observed by Dr. Blackall,

is the natural cure for inflamed serous membranes, otherwise, change of structure takes place.

The treatment appears not only to have subdued the disease, but to have proved prophylactic, with respect to its return. The medical treatment most likely to effect permanent cures, is that which looks to the causes of disease, and which goes to prevent organic changes of structure: whereas, palliative treatment in chronic diseases, leaves patients constantly liable to relapse.

CASE XXXVIII.

Thomas Keegan, æt. 50. Feb. 6, 1818. Two months before his admission was attacked with severe pain in the epigastrium, after a rigor subsequent to exposure to cold and wet. His abdomen immediately swelled, and his limbs became anasarcaous; pulse frequent, and small; epigastrium hard, and painful to the touch; urine scanty, and high coloured.

General blood-letting was practised twice at the interval of a few days; a large blister was applied to the epigastrium; this was repeated three times, allowing the period of a week to intervene between each application.

He took blue pill in small doses, and cream of tartar with jalap.

His swellings soon began to subside, the cedema of his ancles remained for a longer period; it was, however, ultimately removed, whilst he took infusion of gentian, with the acetum colchici. He was discharged, cured, the 10th of April.

Observations.

This appears to have been another instance of neglected peritonitis undergoing the natural cure by effusion, and establishing the dropsical state. The stages of this complaint follow in such regular succession, that there can be no doubt of the inflammatory nature of the case before us. The plan of cure was, first to do away, as far as practicable, all traces of inflammation, and afterwards dispose of the effused fluid.

Large blisters to the abdomen, after venæsection suited to the strength of the patient, appear to be very impressive remedies in removing chronic inflammation, and promoting the absorption of effused fluids.

CASE XXXIX.

Mary Dunne, æt. 22. September 4, 1817. Her abdomen is very much distended with evident

fluctuation; her face emaciated; pulse frequent and small; urine and bowels natural: dropsy is present four months; menses have not appeared for ten months.

Complaints are ascribed to cold and fatigue; cream of tartar and calomel were first prescribed, afterwards digitalis and squill, with purgatives: some diminution of her size had taken place.

On the 28th, coldness and shivering came on with severe pains in the back, and round the belly; after this, she became hot and feverish. Twelve ounces of blood were taken; castor oil administered with effervescing draughts; the pain ceased after the bleeding.

On the 30th, a second venæsection was practised, as she had a threatening of a return of pain. Her dropsy subsided after this without any further effort, and she was discharged, cured, on the 6th of October.

Observations.

This case, at first view, appeared so unfavourable for the use of the lancet, that bleeding was not directed in the first instance. Chronic inflammation, however, probably was in existence. On the 28th, it seemed to assume a subacute or acute

form, and it became necessary to resort to those remedies, which at first were deemed unfit.

It may be collected from this case, that when inflammation is present, even in the masked or lurking form, in which it often exists in the peritoneal membranes, that it is vain to rest our hopes on the ordinary modes of treatment; a bold practitioner will often succeed in cases by venturing on the lancet, or on local bleeding with blisters: but it by no means follows from this, that bleeding is a remedy accommodated to every stage and form of dropsy.

CASE XL.

Thomas Dillon, æt. 34. September 8, 1817. Ascites of the abdomen, with anasarca of the legs, thighs, scrotum, and body; countenance pale; dropsy of three weeks date; it came on with general soreness and pains in the fleshy parts; pulse frequent, urine pale; was cured of dropsy eight years before the present illness.

He was directed squill, digitalis and calomel, in combination with a cathartic electuary. In three weeks the swellings were nearly gone; a rigor, however, occurred on the 6th of October, with pain in his back and loins, and subsequent deve-

lopement of feverish heat. Twelve ounces of blood were immediately abstracted, cream of tartar and blue pill were given, a warm bath was used occasionally. He was discharged, cured, on the 3d of November.

Observations.

This is another instance of the inefficacy of ordinary treatment, where inflammation exists; and is an illustration of the utility of an active plan of treatment, when acute inflammatory symptoms supervene upon that state, where the practitioner is in doubt if any is present. A disease of this nature could never be subdued on the idea that relaxation and debility were the predominant features in dropsy; and of course, the more advanced the disease, the greater the relaxation; whereas, this case, with others, would induce us to believe, that chronic inflammation may be present without its being easily detected, and that acute inflammation may supervene at any period of these disorders.

The painful state of the cellular texture, antecedent to the effusion, is well worthy of remark; sudden congestion, and in some instances, inflammation of the fine serous membranes, which compose the cellular tissue, appears to be the cause of this, and venæsection will generally be

found a remedy well suited to this modification of dropsy, more especially if it is recent, or should have manifested itself after exposure to cold, or after exanthematous and other fevers.

CASE XII.

Michael Nicholas, æt. 30.—Sept. 26, 1817.—A pale thin but muscular man, who had lately recovered from the epidemic fever, in the Hardwicke Hospital, on exposure to cold, was attacked with pains in his bowels, diarrhæa, and passing of blood: immediately after this, ascites to a considerable degree came on with anasarca of the face, legs, thighs, and scrotum; pulse 80—urine scanty and high coloured—respiration unaffected.

He was directed venæsection to ten ounces; after this his pulse was reduced in frequency, and the urine increased: blue pill and cream of tartar were given; his swellings very soon subsided, and he was discharged, cured, on the 10th of October.

Observations.

This is another instance of conversion of disease,* somewhat similar to the case of Sarah

* Vid. Case, by Dr. E. Percival, Dub. Hosp. Reports, p. 293.

Holt,* where dysentery first occurred; in fact in the case of Nicholas, the mucous membrane of the intestines first shewed symptoms of disease; on the subsidence of this, all the serous membranes of the body, including the cellular † substance of the skin, as well as the preitoneum, being in an excited state after fever, and exposure to cold, they readily took on them an inflammatory disposition, which soon ended in effusion. This is the kind of dropsy which frequently follows scarlatina, measles, and small-pox; had venæsection been resorted to in the dysenteric stage of this complaint, no dropsy, in all probability, would have ensued.

CASE XLII.

Catherine M'Cann, æt. 24. Feb. 20, 1818.—Abdomen is enlarged, hard, tumid, and evidently contains a fluid; pulse rather frequent, tongue white, urine high coloured; enlargement came on eighteen months before her admission, after a miscarriage; it was attended with severe pains in the abdomen at the time, and they have recurred occasionally.

She was bled to ten ounces, small doses of calomel were given, and her bowels regulated by castor oil.

* Vid. Case xxxvi.

† Vid. Bichat Anat. Gen. p. 514.

On the 23rd, after the venæsection, the pains were gone, the swelling had already diminished, and the secretion of urine was more abundant and of a better colour.

Cathartic extract, with calomel was given every night, and an aperient mixture with senna on the alternate mornings.

Under this treatment the ascites disappeared; she recovered her health, and was discharged, cured, on the 9th of March.

Observations.

The puerperal state frequently gives rise to inflammatory affections of the serous membranes of the abdomen; when these are acute and attended with fever, the result is for the most part rapid, and often fatal. When the inflammation is chronic, it is generally succeeded by effusion, unless a suitable treatment is soon adopted, and often with every care.

In the present instance it is fair to infer, that it was not too late to resort to venæsection, even though eighteen months had elapsed since the commencement of the disease; and that chronic peritonitis with attendant dropsical effusion, was

the diseased state upon which this remedy shewed so decidedly beneficial a result.

CASE XLIII.

Anne Barton, æt. 30, April, 24th, 1818. Abdomen distended, and containing a fluid; legs and thighs anasaruous; cough; dyspnœa; livid countenance; stuffing; small and frequent pulse; tongue white; urine scanty and high coloured. Disease has subsisted three weeks; it came on after lying in, with pains in her chest and belly.

Blood-letting was directed with small doses of calomel and an opening electuary.

The venæsection was repeated a few days after: her cough and breathing were much relieved, and her swellings had already in some degree subsided: after this blisters were applied to different parts of the thorax and abdomen, and squill with digitalis and calomel, were continued until her swellings had altogether disappeared.

She was discharged, cured, on the 12th of June.

Observations.

Inflammatory symptoms in this patient seem to

have been present both in the thorax, and in the abdomen.

This case, although it was more recent than the preceding one, was more difficult to cure; the lesions of texture were probably more considerable, especially in the thoracic viscera.

The heart, lungs and serous membranes of the abdomen, all appear to have been involved in inflammatory action.

CASE XLIV.

John Ashmore, æt. 54, a labourer, March 27th. Abdomen has been five months swelled, with fluctuation, hardness and pain in the epigastric and hypochondriac regions—scrotum painful, and obliged to be supported by a suspensory, but not œdematous; pulse frequent; urine high coloured and scanty.

Ascribes his complaint to cold and wet. Ten ounces of blood were taken from his arm, and blue pill directed in small doses.

A blister was afterwards applied to the abdomen, and subsequently tincture of squill and digitalis given in conjunction.

The ascites soon disappeared; the local pains having subsided, and the urinary secretion having been considerably augmented, he was discharged, cured, the 13th of April.

Observations.

This was evidently a case of chronic peritonitis ending in dropsy; and is another instance which shews that it was not too late, after five months, to resort to venæsection as a remedy.

The painful state of the scrotum deserves attention; it was probably preliminary to an anasarous condition of that portion of the cellular substance, as well as of a general anasarous state. It is probable that this tendency was arrested by the treatment, which, in removing the inflammatory state of the cellular system, prevented effusion, and put a stop to the establishment of a general anasarous habit.

Although there is nothing new or important in the twelve cases which follow, it is necessary to give them, in order to complete the history of all the patients that were discharged cured. The latter were not considered fit subjects for

the use of the lancet; still, however, some instruction may be gathered from a close investigation of them: comparatively speaking, they may be considered to possess less practical interest than those already related.

CASE XLV.

Thomas Kane, æt. 60, May 16, 1817, a labourer—a large stout man, but pale and sallow, with general anasarca of six weeks duration; it commenced in his legs, next appeared in his thighs and belly successively—urine scanty and high coloured, pulse and respiration natural—a very slight cough.

Disease was ascribed to cold; his treatment consisted in electuary, with jalap and cream of tartar, tincture of squill and digitalis in combination, and small doses of blue pill: his swellings soon disappeared, and he was discharged, cured, on the 9th of June.

This man's dropsy returned in April 1818, for which he was again under treatment, in the Whitworth Hospital, annexed to the house of Industry.

It may be worth while to consider, whether if venæsection had been employed, this man's cure

might not have been more permanent and satisfactory. Some inward change of structure, it is probable, maintains this dropsical tendency.

CASE XLVI.

John Goodbee, *æt.* 52, a smith, June 2, 1817. A very dark complexioned sallow man, with anasarca of the legs, thighs, scrotum and body, also ascites of the abdomen, attended with cough, dyspnœa, irregular pulse, and scanty urine. He had been six months dropsical, and had been long subject to pain in various parts of the abdomen.

He had a blister to the sternum, pills with squill, digitalis and calomel, and the opening electuary. He was discharged cured, 13th June.

His dropsy returned in July; and under a similar treatment, he was discharged cured, on the 10th of August.

He was admitted a 3rd time, on the 23rd February, 1818, blooded to ten ounces and discharged, cured, on the 20th March.

There is reason to think the heart is aneurismal, and the valves disordered, and that the dropsical effusion will recur.

CASE XLVII.

Henry Johnstone, *æt.* 54, a soldier, July 25, 1817, is affected with jaundice, anasarca and ascites of seven months date; pulse natural, urine olive coloured; complains of palpitation and a dull pain, occasionally in the epigastrium. Jaundice appeared first, the dropsy succeeded immediately.

A purgative electuary, with jalap, calomel pills, and a warm bath occasionally, comprised the whole of his treatment—his mouth was slightly affected. The jaundice and dropsy disappeared at the same time.

He was discharged, cured, the 11th of August.

Dropsy in this instance, was symptomatic of the condition of the hepatic viscera. The purgatives and calomel removed the congestive state of these organs.

Had inflammation been present, these remedies, in all probability, would not have proved sufficient.

CASE XLVIII.

Anne Sterne, *æt.* 40, July 30, 1817—Anasarca is very general; it is very conspicuous in the integuments, on the left side of the thorax, the cavity of which is more prominent in that region.

The oedematous limbs are also sore and painful to the touch; abdomen full, and with evident fluctuation; is affected with cough, and oppressed breathing, with debility and tremor; pulse frequent, tongue clean, urine high coloured, no catamenia for two years—a large full woman, not reduced in flesh.

A large blister was applied to the chest; blue pill and electuary, with cream of tartar were directed. Her breathing was soon relieved, and as the swellings subsided, an enlargement in the region of the spleen was discovered; whilst she persevered, however, in the purgative plan, and took in addition, squill, digitalis and calomel, both the solid enlargement, and the watery accumulation disappeared: she was discharged, cured, on the 22nd of August.

CASE XLIX.

Henry O'Neil, æt. 37, September 26, 1817,—after exposure to cold when heated, his legs became oedematous, and his abdomen swelled. He is pale, feeble and sallow; disease is present a month.

After taking a few doses of a cathartic electuary, the anasarca disappeared; on a continuance of it, and some calomel pills, the ascites was remov-

ed, and he was discharged, cured, on the 10th of October.

The disease was probably inflammatory in its commencement, and ended in effusion; but there appears to have been no change of structure in any material organ or texture. The effused fluid was easily disposed of, without much effort as to medical treatment.

A single venesection on the first appearance of the oedema occurring under such circumstances, would probably have removed the dropsical disease at once, and promised more security against a return of his illness.

CASE L.

Mary Connor, æt. 60, October 27, 1817. Legs anasarcaous for 2 months, face occasionally so; abdomen large and full; no cough, but considerable oppression on lying down; pulse moderate; bowels and urine natural.

Electuary with jalap, and cream of tartar, was first directed; afterwards tincture of squill and digitalis, in camphor mixture. Whilst she took these medicines, the swellings disappeared, her breathing was relieved, and she was discharged, cured, the 28th of November.

Some organic disease about the heart, or effusion into the pericardium, was suspected.

CASE LI.

Anne Rorke, æt. 62, a cook, November 7, 1817. After cold and fatigue in sitting up a number of nights in succession, anasarca of the legs came on; the abdomen then swelled, attended with pain; her abdomen is now very large; breathing oppressed; pulse moderate; urine and bowels natural. Dropsy is present four months. She is a full fat woman.

She took small doses of calomel with squill and digitalis, besides cream of tartar with jalap; her swellings disappeared, and she was discharged cured on the 24th November.

Notwithstanding the removal of the dropsical accumulation, this cure proved incomplete; it is probable that chronic peritonitis still remained after the effused fluid was disposed of, and that the lungs continued in a congestive state. The result of this case is known; it is already related, that she died* of a return of dropsy in the month of February following.

Had venæsection been employed once or twice in this instance, to which there was no objection

* Vide case XVIII.

from debility, the result might have been very different; but she was averse to have it practised.

CASE LII.

Catharine Fitzgerald, æt. 10, January 8, 1818, an unhealthy looking child, emaciated, with livid skin and purple lips; complaining also of palpitation, with frequent and irregular pulse; was universally anasarcaous, with ascites of the abdomen.

Dropsy has been present four months; it came on with cough and pain of chest, after the natural small pox; bowels free; urine red and scanty. —Electuary with cream of tartar and oxymel of colchicum increased the discharge of urine; the dropsical effusion disappeared, and she was discharged, cured, the 26th of January.

Dropsy will probably return; the disease was evidently inflammatory in the first instance: early venæsection might have arrested those changes of structure which have taken place in the heart and pericardium.

CASE LIII.

Edward Blake, æt. 48, a coach-driver, January 29, 1818. His abdomen is enlarged, hard and sore

on pressure, evidently containing a fluid; considerable anasarca of the limbs; swellings are present three weeks; pulse frequent and small; urine high coloured and scanty; countenance pale; disease came on with cough and pain in both sides.

Has been twice dropsical before; each time the swellings subsided under treatment in this hospital: the last twelve months before the present attack, has been very intemperate.

He was subjected to the influence of purgatives, mercurials, squill, and digitalis; large blisters were applied repeatedly in succession on the abdomen; his treatment occupied nearly three months; he was, however, discharged cured and free from dropsy on the 27th of April. There is reason to apprehend the disease will return.

CASE LIV.

Michael Carr, æt. 46, April 3, 1818, a full man; legs, thighs, hands and body anasarca; abdomen full; general pains and weakness in his limbs which disable him from walking; is affected also with dyspnœa, palpitation, small and irregular pulse, high coloured and scanty urine; stitches are felt occasionally in the region of the heart: dropsy came on gradually.

The swellings were removed whilst he took ca-

lomel, a bitter infusion with colchicum, and an opening electuary. Blisters were frequently applied; it was difficult to dislodge the œdema from his left hand and leg. He was discharged free from dropsy on the 22d of May.

His heart is probably aneurismal, with disease of the valves: perhaps venæsection, even at the late period that he came into the hospital, might have proved useful; but his excessive muscular debility prevented its adoption.

CASE LV.

Mary Hughes, æt. 50, April 3, 1818. Abdomen enlarged, and with evident fluctuation; legs and thighs anasarca; swellings were preceded by pains in the chest and belly; at present they are gone; pulse moderate; urine scanty; bowels slow.

An opening electuary with cream of tartar, and calomel pills, were directed. Under this treatment the swellings soon beganto subside.

She was discharged, cured, the 4th of May. In inflammatory symptoms evidently preceded the appearance of the swellings, but at the time of her admission they had disappeared.

CASE LVI.

George Tierney, æt. 30, a servant, April 23, 1818. Having exposed himself to wet and cold, a week previous to his admission, was affected with cough and pain of chest; immediately after his legs and thighs became anasarious; pulse on admission moderate; urine scanty and high coloured; bowels slow; no dyspnœa and no local pain; looks pale and feeble.

The opening electuary, with cream of tartar and calomel pills, were directed: his swellings soon disappeared, and he was discharged, cured, the 11th of May.

Venæsection was not used in this case, although the disease appeared in an inflammatory form.—The catarrhal disease subsided spontaneously, and the dropsy, which was only symptomatic of it, soon receded; had bleeding, however, been employed on the first attack of the pulmonic disease; the dropsy might have been prevented.

To complete this report, according to the plan proposed, in addition to the fatal cases, and the successful cases already related, it is necessary to

give an account of such patients as were otherwise disposed of. Seven of those which remain, although they were not cured, received considerable relief from medical treatment; eight patients did not obtain any benefit from the remedies employed, and three left the hospital in a few days after their admission, without submitting to any curative plan.

These cases shall be related very briefly, as this report has already been too much extended; but it is requisite to do so, to avoid any imputation of selecting cases.

CASE LVII.

Mary Glynne, æt. 18, May 3, 1817, had been above twelve months generally anasarious, with dyspnœa and irregular pulse; considerable ascites was also present; disease was attributed to cold and menstrual suppression.

She underwent a mercurial course in another hospital; and after her admission into Steeven's hospital, she took squill, digitalis, cream of tartar, calomel, and purgatives, with very little effect.

Pains in the abdomen in both sides gave her great distress, as they occurred frequently.

She was bled on the 6th of June to ten ounces; it was repeated on the 9th; the pains were removed.

On the 24th June, the venæsection was repeated, on account of a recent cough, and a return of pain. There was a considerable diminution of dropsical swelling after each bleeding. She was discharged, however, at her own desire, on the 4th July; her swellings diminished, and her breathing relieved, but still dropsical.

CASE LVIII.

James Johnson, æt. 33. a soldier, May 1st, 1817, had been dropsical ten months; legs anasaruous, and oozing a serous fluid; abdomen enormously distended; a short disappearance of the swellings took place after a mercurial course, to which he submitted before his admission; his pulse frequent and small; his sides painful on pressure; urine scanty, and high coloured; blue pill and digitalis with cathartics, were first tried. On the 13th June, some blood was taken with a view to relieve an increase of pain in the right side; the swellings were somewhat reduced after that measure. On the 20th June, the paracentesis was performed: he left the hospital however in July; his swellings still continuing, but in a less degree.

CASE LIX.

Mark Giles, æt. 23, works in a brewery—June 20, 1817. His abdomen is considerably distended with evident fluctuation; anasaruous swellings of the limbs have alternated with diarrhæa for ten weeks; they have become permanent within the last ten days; pulse frequent, small, and irregular; cough; dyspnæa; livid countenance; scanty red urine; his illness was ascribed to alternate exposure to intense heat and cold. After he had been a few days in the house, erysipelatosé inflammation attacked his thighs, which were cedematous; he had every appearance also of being affected with subacute inflammation of the pericardium.

This formidable combination of symptoms, it was attempted to meet with general venæsection, which was repeated four times with great relief, and castor oil in the first instance; afterwards, blue pill with opium, and tincture of digitalis and squill, were administered.

He left the hospital free from dropsy: indeed, so far as that disease was concerned, his case might have been placed amongst the patients cured; but he appeared to suffer from the state of his pectoral organs, and he was occasionally teased with diarrhæa.

It should have been mentioned, that he drank ardent spirit freely, to enable him to endure the sudden changes of temperature, to which he was exposed at his work.

This is another instance of erysipelas, in conjunction with anasarca, and disease of the heart; somewhat analogous to the case of Owen McCabe.* The symptoms were too far in advance, the organic changes in structure were too material, to expect any thing like a permanent cure.

CASE LX.

Anne Cassidy, æt. 55. August 18, 1817. A pale leuco-phlegmatic woman, with ascites and anasarca of five weeks duration; cough; dyspnæa; frequent pulse; urine and bowels natural.

The dropsy was nearly removed whilst she took calomel, and an opening electuary, a blister having been first applied; she remained feeble however, and oppressed in her breathing, and she left the hospital to go to the country on the 15th of September.

CASE LXI.

Jane Little, æt. 11. January 8, 1818. Ascites amazingly large, with shooting pains occasionally

* Vide Case XXVIII.

in the abdomen; face emaciated; no anasarca; urine scanty, and red; disease appeared six months before her admission, attended with severe pains in her belly, cough, and dyspnæa; disease attributed to bathing when heated, and taking some strong doses of salts.

Small doses of blue pill with cream of tartar, were employed, and she left the hospital, her swellings having been somewhat reduced, on the 13th February.

CASE LXII.

Laurence Kenny, æt. 67, a brick-layer, Nov. 1, 1817. Ascites of 5 months date, attended with pain on pressing the abdomen; no anasarca; has used before his admission, drastic purgatives and mercurials, rather with aggravation to his pains; pulse moderate; tongue white; bowels and urine natural.

Three general bleedings, castor oil repeated, blisters to the abdomen were first directed.

Subsequently small doses of blue pill with opium, and cream of tartar electuary; his swellings were diminished, but his health was not restored; he left the hospital on the 20th December.

CASE LXIII.

William Carson, æt. 40, a labourer, April 3rd, 1818. A full strong man, with ascites and general anasarca, for six weeks before his admission; hard cough, pain in the right hypochondrium and hip, frequent and full pulse; costive; urine clear; disease ascribed to cold.

Was cured of dropsy, 12 months before in the hospital.

His cough, and pain of side were removed after a general venæsection and a blister; his dropsical symptoms subsided, whilst he took an opening electuary, besides diuretics with mild mercurials.

He left the hospital on the 25th June, a slight cedema in his ancles only remaining.

The eight cases which follow, did not receive any benefit from remedial treatment, whilst they remained in the hospital.

CASE LXIV.

John Murray, æt. 6. May 30, 1817. Ascites to

an unusual degree; no anasarca; pulse frequent; urine clear; it came on after fever 6 months before his admission.

Leeches were directed to the abdomen; they were not however applied. Calomel, repeated blisters, and the paracentesis twice, were employed; he left the hospital on the 25th July, equally large as on his admission.

CASE LXV.

John Roche, æt. 17, June 23, 1817. Has had frequent returns of general dropsy within the last year—abdomen painful on pressure; urine clear.

Venæsection was tried once—an aperient electuary—calomel with squill and digitalis without benefit: after submitting again to the paracentesis, he left the hospital on the 7th of July.

CASE LXVI.

Anne Cuming, æt. 36, August 4, 1817. Pale and emaciated, with ascites of 2 years date, accompanied with pain and hardness in the right hypochondrium; cough, frequent pulse, and high coloured urine, with red sediment.

General venæsection was once practised; blood

was taken also from the abdominal surface by cups, 4 times; the pain of side was relieved, and the watery accumulation much diminished; it was then perceived, that the left ovary was enlarged, and probably tuberculated.

Extract of conium was given with bitters, mild diuretics, and alterative doses of calomel. She left the hospital on the 10th of November, with very little remains of dropsy, but in a very enfeebled and precarious state of health.

CASE XLVII.

Mary Fagan, æt. 24. September 8, 1817. Considerable ascites, attended with pains in the abdomen, and general anasarca; countenance sunk, pale and yellowish; pulse frequent and feeble; urine red; disease of 8 months duration, ascribed to cold.

A large hard tumor was found in the abdomen, seemingly connected with the ovary; this discharged purulent matter from an opening near the umbilicus; on pressure it spouted out a considerable quantity of fetid pus. After some time, purulent matter was discharged mixed with the stools.

As no hope was entertained in this case, a

treatment merely palliative was followed: she left the hospital, however, on the 3d of October.

CASE LXVIII.

Laurence Maginnis, æt. 56.—August 22, 1817. Ascites has been present four months, anasarca of the legs one week; pulse frequent and small; urine high coloured and turbid; looks pale and emaciated; no cough or dyspnoea; disease came on from exposure to cold and wet whilst at work.

He took diuretics and calomel—they made no impression on his disorder; he left the hospital on the 19th of September.

CASE LXIX.

Rose Smith, æt. 26. November 24, 1817.—considerable ascites has been present for three years; abdomen painful on pressure; no anasarca; catamenia were suppressed antecedent to the dropsical enlargement; to this and to exposure to cold, her complaint is attributed. Pulse natural—urine scanty and red—bowels slow.

She was subjected to a variety of treatment, before her admission, sometimes with incomplete benefit.

Cupping to the abdominal surface, was tried, followed by blisters; blue pill with diuretics was given. She left the hospital without any change in her symptoms, on the 13th of April, to go to the country.

CASE LXX.

Henry Toole æt. 40. March 30, 1818.—anasarca has been present thirteen weeks; ascites five; abdomen painful on pressure; has a troublesome cough, as well as diarrhæa; tongue brown, urine high coloured and scanty; disease ascribed to cold.

His cough and pains were somewhat mitigated after venæsection twice performed; blue pill with opium and castor oil were directed; but a dysenteric state, combined with hectic symptoms, induced him to leave the hospital on the 13th of April, and go to the country.

CASE LXXI.

George Stockwell, æt. 22, a hatter. April 24, 1818.—legs, thighs, body and face anasarca, ascites is also present; cough with dyspnæa, livid; lips small, frequent and indistinct pulse; bowels and urine natural. Dropsy is only a fortnight

present; pectoral symptoms he has had above twelve months; has been very intemperate and much exposed to the weather; his pectoral symptoms were somewhat alleviated after venæsection.

His dropsical swellings were removed under a course of mild alterative mercurials with diuretics. His dyspnæa, however, remained, and it was easy to see the heart laboured under some disease of structure, and that the removal of the dropsy would only prove temporary. He left the hospital on the 15th of June, free from dropsy, but in a very enfeebled and precarious state of health.

Three Cases only remain to be accounted for; they remained a very short time in the hospital.

CASE LXXII.

William Kane, æt. 17. August 11, 1817.—Ascites and general anasarca have been present three months. No cough; disease attributed to cold; he left the hospital in a very few days, being dissatisfied with his accommodation.

CASE LXXIII.

James Gore, æt. 18. September, 4, 1817.—abdomen enormously distended, face pale, urine red and scanty; had been cured of dropsy the preceding winter; attributed his relapse to cold. He left the hospital without taking any medicine.

CASE LXXIV.

John Macabe, æt. 18. January 26, 1818.—General anasarca and ascites of three months duration, with hardness and tenderness of the epigastrium. Six months before he was seized with severe pain in his bowels, and constipation; these continued until the swellings appeared; pulse frequent, urine scanty, skin dry; is pale and emaciated. A blister was directed to the epigastrium with diuretics and blue pill.

He left the hospital on the first of February, without complying with the medical treatment.

THE plan which was proposed at the commencement of this Report, having been so far completed by the recital of all the cases, which occurred

within a given period, it is only requisite that a few practical remarks should be added on the general treatment of dropsical diseases, applicable chiefly to those forms of dropsy which appear in the preceding collection. The observations, already annexed to each case, supersede the necessity of being diffuse; and it is to be recollected that this is not a systematic treatise on dropsy.

In attempting the relief or cure of dropsical patients, it is important to attend to the early or first symptoms; to mark, if possible, the organ which was first attacked, and to ascertain what destructive changes in its organization, are impending. After a dropsical disease had been for some time established, a superficial observer might bestow his attention on parts which were secondarily affected, and the patient even might complain most, where, perhaps, there was least reason; for when the disease has become generally extended, it is then very difficult to calculate on the condition of the principal viscera; it is important, therefore, to be acquainted with early symptoms, and with the order in which they made their appearance, to be able to form a diagnosis as to the organ chiefly engaged in disease, that we may lend our aid chiefly to that quarter.

The stage of the disease is likewise to be con-

sidered; remedies which might be most suitable to the early attacks, might prove prejudicial at more advanced periods. Generally speaking, therefore, it is impossible to say, what remedies, or what plan of treatment is best calculated to relieve dropsy, so much depends on the time the disease has been in existence.

The question of the prognosis is also a very desirable one to ascertain; this is well known to depend, in a great measure, on the particular variety of dropsical disease, which may be present.

From the result of the cases recited, it appears that a greater number of dropsies connected with disease of the thoracic viscera, were relieved by medicines, and admitted of cure, than those combined with disorders in the viscera of the abdomen. This may perhaps appear strange when the vital importance of the viscera of the thorax is considered, and when the opinions of others, on this subject, are consulted. Ten of the fifteen patients, examined after death, had either the liver, stomach, or spleen tuberculated; if any reliance is therefore to be placed in a conclusion drawn from so limited a number, ascites, with scirrhus liver, should be considered a more incurable or fatal form of disease, even than hydrothorax combined with some organic disorder in the cavity of

the chest, provided the organic derangement is at all compatible with the functions of circulation and respiration.

Of the patients cured, a considerably greater portion were affected with disease in the thoracic viscera; some of them had evidently organic affections of the heart, and yet they appeared to be acted upon by remedies with infinitely more ease, than those where disease had established itself in the cavity of the abdomen.

We should, therefore, not be too confident in our expectations of recovery in ascites, even though the strength be unimpaired, the respiration and the pulse good; nor, on the other hand, should we despair, where the pulse is feeble and intermitting in hydrothorax, and the breathing difficult and laborious.

The diagnosis to ascertain the organ which has been first affected, and which is chiefly oppressed, is extremely desirable, with a view to the mode of treatment, and the remedies to be selected.

In either general or partial dropsy, the preceding cases warrant us in stating, that whenever the organs of respiration appear to labour, if the strength is not much impaired, and if the

disease is recent, it will be safe to practise general bleeding; still more so, if, in addition, there are symptoms which denote inflammation of any texture in the cavity of the thorax. In some of the cases, a single venæsection appeared to arrest the progress of a recent dropsical disease, in others, a repetition of that practice seemed necessary to ensure success. In such a complication, other remedies appeared to be thrown away, diuretics would not act, and purgatives did not afford any relief until after venæsection had been practised.

After the removal of congestion or of inflammation, should either be present, it is less difficult to regulate the secretions; and perhaps there is less nicety in the selection of remedies than is commonly imagined. Blisters after one or two bleedings, afford relief on the same principle and in the same manner they do in the other pneumonic disorders not complicated with dropsy.

If a chronic, or a subacute inflammatory condition of the viscera in the thorax should maintain a dropsical disease, masked by debility, and not developing itself by its legitimate symptoms; a single bleeding will often tell the true state of the patient, by shewing the quality of the blood.

In incipient dropsy it is generally buffed, but not always so; at all events, a small venæsection, cautiously practised, can do no harm. The strength of the patient, the state of the pulse and respiration, with the presence or absence of local distress, appear to be better foundations to determine whether venæsection should be practised, than the characters of the urine.

In the advanced stages of dropsy if blood is drawn, the serum is milky, and the crassamentum small in quantity, but often cupped, resembling the blood of diuretic patients. This appearance of the blood has been often observed in dropsy connected with tuberculated liver; general venæsection at such a period, or under such circumstances is usually injurious, except recent signs of inflammation have been superadded to those already in existence; in such instances, local detractions of blood by cups* or leeches, practised over the parts where the local pains are felt, and followed by blisters, will frequently remove the dropsical effusion. In recent cases of ascites, when patients are too feeble to bear the lancet, this treatment has often succeeded; it applies more especially to an inflamed state of the peritoneum,

* Vide case xxxvi.

which has been so often observed to precede and accompany dropsy of the abdomen; after this proceeding, very little inward remedies are required; mild aperient medicines, to regulate the discharges from the bowels, are quite sufficient after such a preparatory discipline.

The following case from private practice exemplifies this point of practice.

Miss H—, æt. 14; a delicate girl, much emaciated, became suddenly affected with ascites, and a tense hardness in the epigastrium; her pulse 120; skin dry; tongue white; urine scanty and high coloured with red sediment; dropsy had subsisted only a fortnight; it was preceded by chilliness, and came on with thirst, languor and loss of appetite.

Her previous state of health was reported to have been very indifferent; she had been affected with chorea a year before; for this she was given cinchona with steel and port wine; subsequently she often experienced pain in both sides; blisters had been used with evident relief; purgatives were repeatedly given without affording any. Her feeble and apparently hectic state forbid the use of the lancet, although it was clear that a chronic

inflammatory state had been long in existence, and that effusion had taken place only within the last fortnight. The following treatment, however, proved successful beyond the most sanguine expectation of the writer of this report.

Twelve leeches were applied to the epigastrium; ten more to the lower abdomen the following day; this procedure was repeated four times on alternate days; a warm bath was directed every third night. The only inward remedies prescribed were two grains of calomel, and a drachm of cream of tartar daily for a week; the calomel was then omitted, and a draught with infusion of rhubarb and chamomile substituted. In a fortnight the dropsy was gone, the urinary secretion restored, and in three weeks she had already begun to recover her flesh.

In those dropsical affections which are symptomatic of confirmed phthisis, general bleeding almost invariably hurries the fatal event. It is material, however, to be able to discriminate such affections from chronic inflammation of the *pleura, of the bronchia, or of the parenchymatous texture of the lungs; as in those latter instances venæsection is frequently the means of

* Armstrong on Scarlet Fever, p. 187.

rapidly restoring the patient to health. Some of the cases reported which soonest gave way to treatment were of this description, the swellings having almost immediately disappeared after one or two general bleedings.

Where the liver is concerned, in connection with dropsy, much will depend, whether the disease is one of function, or of structure; if there is reason to suppose the liver in a state of vascular plethora, or venous congestion, its membranes perhaps inflamed, venesection will expedite the cure and tend to prevent relapses and recurrences of dropsy; still more so, if manifest signs of hepatitis should be present. The more recent the case, the more opportunity there is for general sanguine depletion; in more advanced periods, repeated leechings and cupping, followed by blisters, promise more; purgatives, diuretics and mercurials act with greater advantage after such preliminary treatment, and considerably smaller doses will answer.

If our knowledge of diagnostics, enables us to ascertain those cases of dropsy which are complicated with tuberculated liver, spleen, pancreas or ovary, it should make us abstain from the use of the lancet, more especially where there is reason to apprehend a general tubercular diathesis,

of which there are instances amongst the cases recorded; general bleeding mostly hastens the doom of the patient; local bleeding is sometimes applicable to such cases, when the peritoneum covering the tuberculated liver, spleen or pancreas becomes inflamed. There is no form of dropsy in which detractions of blood are more useful than those where the peritoneum is inflamed, and where ascites follows; local bleedings after general venesection, repeated according to the strength of the patient, frequently removes the inflammatory state of this membrane, the vital properties of which have been so well appreciated by Bichat; in truth little is then left after such discipline for the other remedies to accomplish in completing the cure of dropsy.

It is not difficult to distinguish these latter cases from those which attend a tuberculated liver; in dropsy arising from inflamed serous membranes, the pains are superficial, and felt on pressure. Those from scirrhus liver are deeper seated,—the general health more broken, the frame more emaciated, the sediment in the urine of a deeper red. The urine occasionally coagulates on the application of heat in both instances, but not with any uniformity. The causes and manner in which the disease has come on, often shew its true nature. When its attacks are sudden after exposure to cold,

venæsection is generally advisable; when its approach is more gradual, after abuse in spirituous liquors, there is reason to suspect scirrhus, and the treatment should vary accordingly.

Ascites is not unfrequently the sequel of neglected or ill treated dysentery; of this there are some instances amongst the cases reported; under such circumstances the inflammation of the mucous membrane of the intestines, which so often is present in dysentery, has extended to the serous coats of the bowels, and the peritoneum. General venæsection where such conversion of disease is recent, and local depletion by leeches and cupping where it is more chronic, will generally arrest the dropsical effusion; and if the textures concerned are not too deeply involved in destructive changes, mild mercurials with opium, and gentle purgatives will, for the most part, complete the cure.

The same observations apply to those dropsies which follow the puerperal state. These are almost always connected with an inflamed condition of the peritoneal membranes: general or local bleeding may be employed with more freedom, the more recent the attack. In fact, the puerperal peritonitis, if it should occur in a chronic or subacute form, always terminates in dropsy, unless, as

in its more severe forms, where speedy death or suppuration is the result.

Amenorrhœa is frequently known to be the forerunner of dropsy and as often to occur in complication with it. If sanguineous depletion is early and freely used on the appearance of congestion in any important viscus, dropsical effusion will rarely follow; and even when it has taken place, an active treatment of this kind will soon make the swellings disappear. This mode of treatment is still more advisable in those instances, where predisposition to disease in the lungs exists. This may be prevented by the timely relief afforded to those organs, which from the suppression of the menstrual discharge may be thrown into a state of sanguine congestion.

There is not much to be inferred from the preceding report, as to the comparative efficacy of digitalis, squill, colchicum, cream of tartar, and other remedies usually employed in dropsical diseases. Each of these has succeeded where the patient was properly prepared for their employment; but it appears plainly that none of them will prove effectual if they are prescribed too early; nor can we rely solely on them. No doubt there are cases more especially suited to each of the individual remedies mentioned; and those who can specify them and lay down rules for

prescribing them with effect, will improve the practice in dropsy. It has so happened that a combination of squill and digitalis was directed oftener in the cases which form this collection than any diuretic; a union of these remedies has succeeded so well in the hands of the reporter, where either of them separately had made no impression.

Colchicum has been found a very useful and active diuretic where digitalis or squill had disagreed. It is necessary, however, that the remedy should be prepared from roots taken up early in spring* as it is only at that time they possess their true remedial activity. This point was put to the test of experiment by the writer of this paper in Steevens' hospital in the year 1806, previous to the publication of the Dublin Pharmacopeia. The acetum colchici made from roots taken up in February presented a striking diuretic influence in every instance where it was employed; whereas that prepared in August and September, from roots out of the same garden† was perfectly inert and devoid of every medical power.

* Ph. Dub. 1807. p. 19.

† The colchicum roots were supplied by Dr. Robt. Percival who formerly distinguished himself as Professor of Chemistry, in the University of Dublin; he suggested the comparative experiment.

Elaterium was not directed in any of the cases which form this collection. It may be observed here, that the powdered leaves or the fruit of the plant possess all the sensible qualities of the drug, although they are not near so strong as the official extractive form; they are frequently employed in Steevens' hospital, sometimes alone in small doses, and often in conjunction with cream of tartar; in many instances the powdered leaf of elaterium proved an useful adjuvant in depleting dropsical patients.

The preparation of the fecula or extract according to the pharmaceutic form, is very troublesome and expensive; it requires an enormous number of the cucumbers to prepare a single drachm of the medicine. Should the powder be found on trial to answer the character given here, it may be considered an acquisition to the Materia Medica, especially for hospital practice, where æconomic arrangements are often necessary.

Elaterium will be found to answer better in those dropsies connected with disease in the serous membranes of the abdomen, where there is torpor of the mucous coats; but in many delicate and irritable conditions of the mucous membranes of the stomach and intestines, it is less appropriate and often prejudicial.

I need not state, how very general the use of mercury has become in this class of diseases. In the greater number of incipient dropsies, I believe it not only fails, but often aggravates the symptoms, by adding to the excitement, and increasing the inflammatory disposition. But in more advanced periods, and even earlier, after timely venæsection and other preparatory expedients, mercury proves a remedial agent of no inconsiderable efficacy. Of this point of practice, however, there are many illustrations in the preceding collection of cases.

As the subject of dropsy is still under investigation, an attempt will be made to elucidate the precise power of each of the diuretics most used in practice, and to connect their employment, if possible, with the appearances of the urine, or any other symptoms of which advantage may be taken. These matters may perhaps be the subject of a future report.

So far as can be collected from the preceding histories, a selection of the diuretics to be employed, appears a matter of less consequence than might have been expected; where the medical treatment was directed to prevent or remove those tendencies to organic changes in structure, which have been observed to precede dropsical effusion,

little then was left for the officinal diuretics to accomplish.

The plan of treatment where early venæsection in dropsical diseases is recommended, must appear very abhorrent to those who were accustomed to consider the dropsical or serous diathesis as the result of atony or weakness. Relaxation* in the exhalant system is considered one of the general causes of dropsy, according to Dr. Cullen, and blood-letting† one of those practical measures which often gives rise to this relaxed state. Whereas those who look to the diseased appearances in the different cavities, are more disposed to conclude dropsy as associated with an excited condition of the exhalants pressed by the vis à tergo of the capillaries, and oozing out their fluids more especially on the serous membranes, which are so constructed as not to allow the same distention of their vessels which other textures permit.

The name of dropsy, and the notions of debility and relaxation have long tied up the hands of practitioners; it is time that these delusive theories should give place to facts and experiments, and to a reasoning founded on them. It would be well therefore, in forming our plans of treat-

* Cullen, first lines, MDCLVI.

† Cullen, first lines, MDCLX.

ment, to lose sight of the name of dropsy, and take measures to prevent those organic changes, which we are apprehensive are going on. Nosology in giving systematic names to diseases, has facilitated the study of medicine, but it inclines us to dwell too much on symptoms, and too little on the real pathological state.

APPENDIX.

On presenting this report to the Association, some of the members of that body have, with an appearance of reason, objected, that less attention had been paid to the state of the urine, than should have been consistent with the plan of the report. In a considerable number of the cases, the urine was tried by the test of heat, as to its power of coagulating; but the proportion of instances where it took place was very inconsiderable compared with those which did not coagulate; nor was I able to connect those cases where inflammatory symptoms existed with the presence of coagulable urine. In many of those which appeared to me to require the prompt use of the lancet, the urine did not coagulate. Under this impression, I ceased to draw any practical inference from that appear

ance, and as the memorandum was lost which contained those trials, I discontinued making any further experiments on the subject.

Since this paper was read, however, I have been enabled to report forty cases where the urine has been tried by the test of heat, the result of which is given in the annexed tabular form.

The first of the tables gives a report of cases which occurred in Steevens' hospital since the 10th of July; the second is taken from the Whitworth Hospital, annexed to the House of Industry, consisting mostly of patients who became dropsical after fever; even amongst this description, the instances, in which the urine coagulated by heat, are very few compared with the greater number, where no such appearance was observed.*

* Dr. E. Percival, who was my predecessor, as one of the physicians to the house of industry, mentions that the result of his experience on this subject fully coincides with mine. After he had tried dropsical urine by the test of coagulation in a number of cases, he at length lost all confidence in the test, either as an invariable evidence of inflammation, or as a guide of practice. His statement is likewise confirmed by the additional testimony of Dr. Reid, who acted as clinical clerk at the house of Industry, at the time those experiments were made. It is peculiarly satisfactory to me, to find the observations of these two friends of mine in consonance with my own.

No. I.

Name and Age of Patient.	Disease and Remarks.	State of Urine, when exposed to Heat.
John Donnelly, et. 40.	Third attack of General Dropsy.	Not coagulated.
Henry Skerritt,	Anasarca and Ascites of 1 month date, with Pulmonic inflammation, cured by 3 V. S.	Not coagulated.
Rose Nowlan, et. 24.	Anasarca and Ascites, with diseased heart, 3 months date.	Not coagulated.
Andrew McMahon, et. 60.	General Anasarca, 1 month date, with disease of the heart.	Not coagulated.
Francis Dignan, et. 37.	Ascites of 2 years date; pale and sallow.	Not coagulated.
John Kearney, et. 57.	Very general anasarca, 1 month date, with carditis; cured by repeated V. S.	Not coagulated.

APPENDIX.

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No. I.

<i>Name and Age of Patient.</i>	<i>Disease and Remarks.</i>	<i>State of Urine, when exposed to Heat.</i>
John Donnelly, æt. 40.	Third attack of General Dropsy.	Not coagulated.
Henry Sherritt,	Anasarca and Ascites of 1 month date, with Pulmonic inflam- mation, cured by 3 V. S.	Not coagulated.
Rose Nowlan, æt. 24.	Anasarca and Ascites, with diseased heart, 3 months date.	Not coagulated.
Andrew McMahon, æt. 60.	General Anasarca, 1 month date, with disease of the heart.	Not coagulated.
Francis Dignum, æt. 37.	Ascites of 2 years date; pale and sallow.	Not coagulated.
John Kearney, æt. 37.	Very general anasarca, 1 month date, with carditis; cured by re- peated V. S.	Not coagulated.
Mary Cahill, æt. 25.	Ascites, 5 weeks date, with pain of both sides.	Not coagulated.
Anne Irwin, æt. 35.	6th Attack of Dropsy: repeatedly tapped.	Not coagulated.
Cornick Rooney, æt. 48.	Anasarca and Ascites, 10 days date; cough, dyspnea, palpita- tion.	Not coagulated.
Mary Clinton, æt. 68.	Acites of long standing.	Not coagulated.
Thomas Maguire, æt. 46.	Anasarca and Ascites, with cough and dyspnea.	Not coagulated.
Dorothy Collins, æt. 80.	Ascites and œdema of feet, 10 days date, after fatigue and cold with Enteritis.	Not coagulated.
Anne Reeves, æt. 22.	Ascites and œdema of feet 7 weeks date, with inflammatory symp- toms of the thoracic viscera.	Not coagulated.
James Barnes, æt. 23.	Ascites of 5 months date, with chronic peritonitis.	Not coagulated.
Catherine Burke, æt. 50.	Ascites and œdema of the feet, 5 months date from cold and fa- tigue.	Not coagulated.
Patrick Daniel, æt. 50.	Ascites 5 months date; chronic peritonitis.	Not coagulated.
William Carson, æt. 40.	3rd Attack of General Dropsy within the last 2 years.	Coagulated.
Bridget Cosgrave, æt. 44.	General Dropsy, with cough and asthma of long standing.	Coagulated.
James Gaynor, æt. 62.	Ascites and Anasarca; pale and sallow with dyspnea.	Coagulated.

SURGICAL REPORT;

CONTAINING

AN ACCOUNT

OF THOSE

AFFECTIONS OF THE PENIS

WHICH ARE GENERALLY CONSIDERED AS PRIMARY
SYMPTOMS OF SYPHILIS, WITH THE MODES
OF TREATMENT EMPLOYED IN THE

RICHMOND SURGICAL HOSPITAL.

BY C. H. TODD,

MEMBER OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND, &c.

*From the Dublin Hosp. Reports on
Communications - Vol 2*

DUBLIN:

PRINTED BY GRAISBERRY AND CAMPBELL,
FOR HODGES AND M'ARTHUR, COLLEGE-GREEN.

1818.

No. II.

Patrick Colloony, et. 34.	Edema of feet and legs after Fever.	Not coagulated.
Francis Reilly, et. 24.	Edema of feet and legs after Fever.	Not coagulated.
Celia Jones, et. 17.	Edema of feet and legs after Fever.	Not coagulated.
Patrick Kiernan, et. 27.	Edema of the feet and legs after Fever.	Not coagulated.
Thomas Kane, et. 60.	General dropsy, 3d attack within 2 years.	Coagulated.
Ellen M'Bride, et. 53.	Edema of feet and legs with ascites after Fever.	Coagulated.
Mary Anderson, et. 51.	General dropsy after Fever.	Coagulated.

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DUBLIN:

PRINTED BY J. J. MURPHY, 11, PATERNOSTER-ROW, LONDON.

1848.

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IN the Richmond Surgical Hospital seven small wards are set apart for the reception of male patients labouring under venereal complaints. These wards, which contain thirty beds, are always full, and afford the Surgeons ample opportunities of practice in such cases; and as a large proportion of them have been placed under my care, I propose, in a series of successive reports, to treat of the various appearances and progress of these affections, and to give an account of the treatment of each, as at present pursued in my division of the Hospital.

In the reports which it is my intention, from time to time, to publish in this work, all theoretical discussions, either on the nature of venereal diseases, or on the use of the several remedies employed for their cure shall be avoided;* I shall confine myself to statements of facts, with such observations only as appear calculated to throw light on, or explain our hospital practice. In the following pages I propose to examine the several affections of the male organs of generation, which have been generally considered as primary symptoms of syphilis.

INFLAMMATION OF THE PENIS.

In hospital practice one of the most common affections of the penis is inflammation, and this we find is produced by several causes, both local and constitutional. The local causes are neglected secretions, collected under the prepuce, and on the surface of the glans; imperfectly treated excoriations; laceration or any other external injury; gonorrhœa, ulcers, &c. Any unhealthy state of the system, in whatever way produced, whether by preceding diseases, irregularity of habits, or occupation, may be considered as the constitutional or predisposing cause of this affection.

Phymosis, or Paraphymosis, exists in almost every severe case of inflammation of the penis; the former

* For the best information on these important points, I must beg leave to refer to the ingenious Essays of my friend and colleague, Mr. Carmichael, one of the Surgeons to the Richmond Hospital.

occurs more frequently than the latter; and so long as that state of the prepuce continues, if there is no external ulceration, we can form an opinion as to the probable cause of the disease only from the account the patient may give us; a source of information which, in an Hospital particularly, is seldom to be relied on. I have not latterly considered an early decision on this point of much importance; for during the existence of inflammation, the treatment of all cases must be, in essential points, the same; when the tumefaction subsides so as to admit of the retraction of the prepuce, the origin of the affection may be detected, and the subsequent management of the patient regulated accordingly.

Although it must be admitted that syphilitic ulcers occasionally excite very violent inflammation in persons of irritable habits of body, or in such as are peculiarly liable to inflammatory action, yet inflammation of the penis is so common an occurrence amongst the lower classes in this city, and is so rarely met with in the higher circles, when due attention to cleanliness is observed, that I have long looked upon it, in Hospital practice, as an affection almost uniformly local; and I have never had occasion to regret the adoption of a plan of treatment which this opinion naturally suggested.

When young men of plethoric habits are attacked with inflammation of the penis, the symptomatic fever is usually very considerable; the pain is great, and from the tense and turgid state of the inflamed

part we sometimes have reason to fear that gangrene will quickly supervene. Whether there is any peculiarity in the structure of the parts composing the penis, which renders that organ more liable to inflammation and its more alarming sequelæ, than many other external parts, I am not prepared to decide; but Hospital experience has convinced me, that acute inflammation of the penis is very easily excited, and very rapidly produces mortification; and that cases of gangrene of the prepuce, or even of the glans or body of the penis, on the fourth or fifth day from the first appearance of disease, are by no means uncommon. A knowledge of these facts has induced me to pursue the most active treatment from the commencement, having too often observed, that indecision as to the expediency, or delay in the employment of vigorous measures, has been productive of the worst consequences.

In acute inflammation of the penis a strict enforcement of the antiphlogistic regimen is most necessary. Confinement to bed, rigid abstinence, and free depletion, are indispensable; but copious blood-letting in the earliest stage of the disease, is the remedy on which we must place our principal reliance. From sixteen to twenty ounces of blood are to be withdrawn at first, and in the case of a stout healthy patient, I should have no hesitation in directing a repetition of venesection so long as the local symptoms remain urgent, and the fever continues. The benefits derived from blood-letting will be found, in a great degree, to depend on the early employment

of that remedy to as full an extent as the patient is able to bear; but even in cases where mortification has actually commenced, it is often necessary to have recourse to the lancet once or twice, particularly in plethoric patients, and in such as have neglected their disease in the incipient stage of inflammation.

The abstraction of blood from the penis by means of leeches is found extremely useful in many instances, but this should be looked upon purely in the light of an auxiliary remedy, and as by no means sufficient to supersede general blood-letting, except in debilitated or unhealthy constitutions. A very general prejudice exists against the application of leeches in these cases, which has originated in an erroneous idea, that the leech-bites are liable to degenerate into venereal ulcers, an occurrence which I have never witnessed; it is true, leech-bites on an inflamed penis do occasionally suppurate, and even ulcerate so as to become very inconvenient to the patient, yet this objection should not deter the practitioner from having recourse to local blood-letting, when severe inflammation, pain and tension of the part indicate its expediency.

In our selection of applications to be made to the inflamed penis, we are governed very much by the sensations of the patient. Cold and warm fomentations are equally beneficial, if equally grateful to the patient. I generally direct a cold lotion to be made use of at first, and continue it so long as it affords relief; when this application ceases to be of use, or

excites uneasiness, as is frequently the case after the second or third day, warm stupes and poultices are substituted. Whether a purulent discharge from within the prepuce exists or not, patients ought to inject tepid water between it and the glans penis very frequently in the day; this is a necessary precaution, as the irritation excited by matter, or even by inspissated mucus confined in that situation, will keep up and encrease inflammatory action. In cases of severe phimosis, where there are extensive excoriations or ulcers, and the quantity of matter is considerable, and where the orifice of the prepuce is so much contracted as to prevent the discharge from escaping, a division of the prepuce for the extent of about an inch at its upper part, is usually performed with great advantage. I have sometimes seen the prepuce divided for the whole of its extent; this, however, is not only useless in almost every instance, but very generally productive of injury, in consequence of the size of the ulcer, which unavoidably succeeds to an incision so extensive, and the permanent and inconvenient deformity of the part which remains after the parts have healed.

During the entire progress of this affection, patients are to be kept as much as possible in the horizontal position, and the penis supported so as to prevent its becoming pendulous; laxative medicines are occasionally to be exhibited; if symptomatic fever runs high, and the temperature of the skin is much augmented, saline draughts, or small doses of a diaphoretic mixture, composed of the water

of acetated ammonia and antimonial wine, are to be administered at proper intervals; and to relieve pain and produce sleep, an opiate combined with an antimonial is to be given at night.

Under this plan of treatment our patients generally recover in the course of a few days; pain and fever subside, and the inflammation and swelling gradually disappear; the prepuce recovers its natural dilatibility, and a retraction of it affords an opportunity of ascertaining whether any and what description of ulcer exists underneath.

From this inspection, however, we have it not in our power always to arrive at a satisfactory conclusion; we are often compelled to remain in doubt as to the real cause of the inflammation. In some constitutions it appears that genuine chancres will heal spontaneously, or with very little local attention; or that their specific characters will be altered or effaced by severe inflammation, so as to deprive them of those distinctions which have been commonly considered as essential to them. And I am convinced that a violent inflammation of the penis quickly supervening on chancres, may effectually destroy their syphilitic nature, and convert them into ulcers purely local; a change which I believe will often take place in cases where inflammatory symptoms are very acute, or where the chancres and contiguous parts have suffered the process of sloughing.

In the Richmond Hospital we have long been in

the habit of abstaining from the exhibition of mercury in cases where, on the subsidence of inflammation, no ulcer was discovered, or where such ulcers as might exist presented a florid, healthy appearance, and speedily cicatrized under the influence of some simple lotion, conceiving it more prudent, under such circumstances, to wait for symptoms of constitutional disease, than to incur the risk of administering mercury unnecessarily.

The period at which cutaneous affections or other constitutional symptoms of syphilis succeed to chancres, it is well known is indefinite, and is believed to depend on a variety of causes, which it would be superfluous on the present occasion to detail. However, from observations made on the Hospital cases, I may affirm, that this will be found in a great measure to depend on the circumstance of mercury having been used or not at the commencement of the disease. If mercury is used when chancres first appear, and before inflammation of the penis sets in, constitutional affections will in all probability be retarded. But in the cases wherein that medicine has not been resorted to in the first instance, we may expect that those symptoms will shew themselves in the course of a few weeks. Indeed it often happens that they do appear, even before the effects of the inflammation are sufficiently removed, to justify us in discharging the patient from the hospital.

On the prepuce being retracted, we often find its internal surface, and the surface of the glans penis,

particularly near to the corona, excoriated or superficially ulcerated; in these cases, under the use of a saturnine or zinc lotion, the parts cicatrize in a few days. In other instances granulating ulcers sometimes presenting a fungous appearance, and even resembling condylomata, are met with; these are treated with the lotion of the sulphate of copper or nitrate of silver, and are seldom obstinate. In others we discover deep and irritable ulcers, with a foul and sloughy surface; in such cases the unguentum Hydrar. Nitratis, or the red precipitate in powder, will, after two or three applications, destroy the morbid sensibility of the parts, and cause the ulcers to assume an healthy appearance: however, should they resist local treatment, and particularly if any symptom of bubo should occur, we commence the exhibition of mercury, which seldom fails in producing salutary effects on the disease, provided its effects on the constitution of the patient are not obstructed by any peculiarity of habit, or irregularity in the employment of the remedy.

After the acute symptoms of inflammation of the penis subside, it often happens that a considerable degree of tumefaction, and a dusky redness of the part, without much pain or tension, continue for some days. This is observed to occur most frequently in persons who have passed the middle period of life, and who labour under some chronic visceral disease arising from intemperance or hardship. When not interfered with, this affection is sometimes very tedious; and when excited, either in consequence of general

indisposition, or local irritation, it is liable to take on an acute inflammatory action, from which the most alarming consequences are to be apprehended. Nay, in this indolent condition of the penis I have seen gangrene set in even without any apparent accession of inflammation, or uneasy sensation in the part, except a slight degree of itching; and a part of the prepuce has been actually destroyed before the patient was aware of his danger.

This morbid state of the prepuce, I apprehend, is not solely dependent on local causes, and, consequently local remedies are not to be relied on for its cure. The digestive organs, and in particular, the biliary system, are to be closely attended to, and if we find their functions impaired, we must resort to the remedies best adapted to restore them. Large doses of calomel are employed in these cases with decided advantage, as soon as severe pain and tension have subsided. Indeed when the skin and eyes of the patient have a jaundiced appearance, when the tongue is loaded, or any unusual fullness or tenderness is discovered in the region of the liver, the use of calomel is commenced, even before acute symptoms have completely subsided.*

* *R.* Submur. Hydrar. gran. viii, Pulveris Antimonialis, gran. ii. Cons. Ros. q. s. ut fiat Bolus.

I generally direct the foregoing Bolus to be taken for three or four nights in succession, provided its effects on the bowels are not too severe, and then small doses of the sulphas magnesie are exhibited daily, with an occasional repetition of the Bolus until symptoms have undergone a material improvement.

It may be objected to this practice, that the constitution of the patient will become quickly mercurialized by the exhibition of large doses of calomel, an effect which they generally produce, and that the question of the syphilitic origin of the disease will be thereby involved in greater obscurity than if mercury had not been administered. In reply to this I would beg leave to state, that cases of what may be termed chronic inflammation of the penis, are very seldom syphilitic; that under a mode of treatment essentially different from that now recommended, the recovery of the patient is slow and uncertain; and that at last an alterative, and sometimes a protracted course of mercury must be resorted to, for the removal of a diseased and indurated state of the prepuce, which almost always remains for a great length of time, after an attempt to cure the complaint by local remedies alone. And even admitting that this affection of the penis originates in a syphilitic infection more frequently than I believe to be the case, if the patient is salivated after the third or fourth calomel bolus, it is probable that the degree of mercurial action, thus induced, if it be competent to remove local appearances of syphilis, will be sufficient to secure the patient from further symptoms of the disease, as effectually as mercury in any quantity can secure him.

If the patient complains of pain, or is restless, a grain of opium is added to the bolus, and if a tendency to pyalism is induced, the calomel is discontinued.

All the cases of this disease of the penis which have come under my care in the Richmond Surgical Hospital, and in private practice for several years past, have been treated according to this plan, and recovery has been, with very few exceptions, both expeditious and perfect; of these cases I do not recollect a single instance in which constitutional symptoms unexpectedly supervened; so that I have adopted it as a rule of practice, not to allow the mere apprehension of this mode of treatment preventing the disease from developing itself, to deter me from exhibiting calomel on the principle, and at the period I have recommended; neither would I persevere in the use of this medicine, or of mercury in any other form, for a longer time than local symptoms, or a disordered state of the digestive organs seem to require, on the uncertain chances of the disease being syphilis, and of the continuance of a mercurial course preventing secondary symptoms.*

PARAPHYMOSIS.

This painful and alarming affection of the penis arises from a contraction of the prepuce behind the glans, and a consequent strangulation of the latter. In some instances a sudden tumefaction of the glans, when the prepuce is retracted, will appear to be the

* This mode of treatment is successfully employed in the Richmond Hospital in cases of chronic inflammation of other external parts, and particularly of the feet and legs, to which the poor in this city are very liable.

primary cause of paraphymosis, but it is more generally found to originate in disease or contraction of the prepuce. However, it is evident that, when paraphymosis is once produced, both these causes continue to operate in increasing each other, and thus render the disease more obstinate, and delay more dangerous.

The stricture in paraphymosis is generally formed by the edge of the prepuce, which becomes very much tightened behind the glans; the latter swells considerably, and assumes a livid colour. If the disease continues many hours the integuments of the penis also swell and inflame, so that the constricted portion of the prepuce becomes imbedded in the penis, and concealed between the swollen glans and integuments. Under such circumstances the case is liable to be mistaken for a simple inflammation of the penis, an oversight for which the practitioner can plead no apology.

The existence and situation of the stricture may be ascertained, by gently drawing the integuments of the penis towards the pubis, at the same time that the glans is turned a little to one side. In cases of this kind the stricture is very tight, and in general must be divided before a reduction of the glans can be effected; this may be done by the Surgeon introducing a director under the edge of the prepuce, on which a sharp pointed bistoury is to be passed, and the point of the bistoury being pushed through the prepuce above the stricture, the contracted part

which is usually very narrow, is to be cut across. It will often be necessary to divide the stricture on both sides of the penis, and will be better in all cases wherein the glans is much distended with blood, the parts very painful, and the stricture unyielding, to perform this simple operation, without any previous attempt at reduction; such attempts being always productive of much pain to the patient, and being generally fruitless, unless when undertaken at the earliest period.

In many cases of paraphymosis, an eversion of the internal surface of the prepuce takes place, which gives the penis a peculiar contorted appearance: this everted portion of the prepuce is situated between the stricture and the glans; and its cellular tissue becoming infiltrated with serum, and particularly so at the lower part, a tumor is formed even larger than the glans. In this species of paraphymosis, numerous punctures must be made with a lancet through the transparent membrane covering the distended part of the prepuce, and the effused fluid completely discharged, before the operation of reduction ought to be commenced. It frequently happens in cases of this kind, that, when the extravasated serum has passed off, a relaxation of the stricture ensues, and the parts are easily replaced; however, should the stricture continue obstinate, a small incision made into it with a lancet, at the side of the penis, will, in general, be sufficient to remove it: the operation with the director and bistoury described above, cannot with propriety be

performed here, as much of the prepuce would thereby be unnecessarily divided.

When paraphymosis is complicated with extensive ulceration of the penis, or when the disease has been neglected, and gangrene of the glans has commenced, reduction by force cannot be attempted with safety; under such circumstances we must freely divide the stricture, and endeavour to produce relaxation and spontaneous reduction, by the application of emollient stupes and poultices. The same plan is to be pursued where nature employs the process of ulceration to relieve the strangulation, either by destroying the part in which the stricture exists, or by removing the part on which the stricture presses. The efforts of nature, however, in these cases, are usually ineffectual, and the cure will be more expeditious and more certain by the treatment recommended above being early adopted.

An affection which may be termed a chronic paraphymosis, is very frequently met with amongst hospital patients; in this the stricture is not so great at its commencement as to produce pain, and the disease is therefore neglected for several days; ultimately the prepuce becomes thickened, the penis distorted, and, although the glans is not actually strangulated, yet we find it impossible by manual operation to restore the parts to their natural position; this is a case to which a mode of treatment similar to the foregoing is applicable; it sometimes will yield to relaxing applications, but in most

instances a division of the straitened portion of the prepuce will be found necessary.

A partial paraphymosis sometimes takes place in cases of extensive ulceration of the glans penis, which appears to be the consequence of the margin of the prepuce pressing on the ulcer, and exciting severe irritation; inflammation ensues, the extremity of the glans becomes enlarged, and is constricted by the prepuce, and the patient suffers excruciating pain; a division of the prepuce to an extent sufficient to relax the stricture, and to enable the dresser to interpose suitable applications, will afford considerable relief. This division of the prepuce will be most advantageously made at a part remote from the ulcer of the glans.

Although in the acute forms of paraphymosis our principal reliance must be placed on the prompt and decisive employment of local remedies, yet in severe or obstinate cases we always experience great assistance from constitutional treatment. In a patient of a full habit of body the antiphlogistic regimen must be rigidly enforced; the lancet is to be used with freedom, and particularly if the replacement of parts cannot be effected without much force; in such cases considerable benefit will often result from the patient being bled to 18 or 20 ounces immediately before reduction is attempted. In boys, who are very liable to paraphymosis, and often conceal their complaint until the stricture and swelling become alarming, I have found the warm bath very effectual in producing re-

laxation, relieving pain, and in rendering the reduction of the glans a less difficult operation.

After a paraphymosis is removed, the case is to be looked upon as one of inflammation of the penis, and treated accordingly. The antiphlogistic regimen must be adhered to for some days; the patient is to be cautioned against drawing back the prepuce, until the parts completely recover their natural texture; cleanliness must be carefully observed by frequent injections of tepid water under the prepuce, and if phymosis ensues, which is often the case, it is to be managed according to the plan detailed in the preceding section.

ERYSIPELAS OF THE PENIS.

Erysipelas of the penis is generally produced by local irritation acting on an unhealthy subject. It is seldom venereal, although it may be excited by chancres, and particularly when they are irritated by any severe stimulating or astringent application. It is a more common affection in old men and boys than in persons of the middle periods of life, and those who have a congenital or permanent phymosis, and are thereby disposed to excoriations and other eruptions on the tender skin of the glans and prepuce, are very frequently attacked by it.

Erysipelas of the penis is accompanied with more or less œdema, and often occurs in patients labour-

ing under general anasarca. In old men it is sometimes the consequence of those abrasions and ulcers which are produced by the extremity of the prepuce retaining the last drops of the urine, and in boys who, from a peculiar sympathetic sensation excited in the glans by irritation in the urinary or digestive organs, have acquired the habit of pulling the prepuce, erysipelas of the penis often takes place.

When this affection succeeds to a phlegmonous inflammation of the penis, it may be symptomatic of disease deeply seated; either of abscesses, of sloughing of the cellular substance or fascia, or of fistulous ulcers under the integuments. I was lately called upon to visit an elderly gentleman labouring under erysipelas of the penis to an alarming extent, which, although he suffered much pain, and was confident he had no venereal complaint, he was induced by mistaken delicacy to conceal for several days. The prepuce was much swelled and elongated, the symptomatic fever was very high, his tongue covered with a yellow slime, he had severe rigors, and his servant informed me that a strong tendency to delirium existed during the night. On examining the penis attentively, I discovered a fluctuation on its dorsum near the pubis; I made a small incision into this part, and gave exit to more than an ounce of offensive matter; on the following day a large slough was discharged through the wound, and perfect recovery rapidly followed.

The tumefaction and redness which occur in ery-

sipelas of the penis, and the degree of fever which accompanies it, are often very alarming; however I do not recollect an instance of an unfavorable termination of the disease, except in complicated cases, or in such as were very much neglected or maltreated at the commencement. When this affection is purely idiopathic, or produced by local irritation, the treatment of it is not different from that which is applicable to erysipelatos inflammation of any other part; the chief point to be early attended to, is the removal or palliation of the exciting cause, if any such can be detected. In cases where œdema exists to such a degree as to contract the orifice of the prepuce, and to interfere with the free discharge of urine, a few superficial punctures with a lancet will unload the cellular substance, and by removing the tension of the skin, will contribute materially to the relief of the patient.

Where the redness of the part is very great, and the patient complains of much pain, heat and tension, almost immediate relief may be afforded by the early application of a few leeches; but if the patient be old or debilitated, leeches are not admissible, for in most instances the discharge of blood from the skin of the penis, produced in this way is great, and often not easily suppressed.

A cold lotion constantly applied to the part will often remove the disease in a day or two, and I have no hesitation in prescribing it when treating a young and healthy patient; but in cachectic constitutions,

erysipelas sometimes assumes an erratic form, which proves tedious and embarrassing, repellent applications are therefore not to be used indiscriminately,—warm fomentations, injections of tepid water under the prepuce, and occasionally emollient poultices, are the local remedies most commonly employed in the hospital. Farinaceous or absorbent powders have been applied to the erysipelatous surface, but they are now seldom used in these cases, in consequence of the inconvenience they occasion to the patient by forming incrustations in the groins and amongst the hair of the pubes and scrotum. In all cases of erysipelas of the penis, and especially if the disease extends to the scrotum and surrounding parts, minute inquiry should be made into the state of the urethra, as this affection is a constant attendant on urinary infiltrations.

GANGRENE OF THE PENIS.

There are few occurrences in the progress of disease which excite more alarm in the mind of the patient, and more anxiety in that of his Surgeon, than even the slightest appearance of gangrene on the penis. When inflammation of that organ is treated with activity, and the treatment commenced at an early period, gangrene seldom ensues; instances, however, not unfrequently happen, in which the most energetic practice fails to prevent this fatal effect of inflammation, and the parts fall into a state of mortification with a rapidity of progress which is scarcely credible; whether this is owing to any pecu-

liarity of habit in the patient, or of structure in the part affected, or to both, it is not of importance at present to determine; to be aware of the fact is sufficient to put us on our guard, and to induce us in all cases of acute inflammation of the penis, to use the most active remedies to effect its reduction.

Patients very frequently apply at the hospital with the extremity of the prepuce in a state of mortification, and the rest of the penis highly inflamed. The treatment of a case of this kind must be strictly antiphlogistic, the diseased parts are to be fomented at regular intervals, and the effervescing poultice applied, which is to be renewed at least every third or fourth hour. Where the patient complains that the weight of the poultice is inconvenient, or productive of much pain, dossils of lint wet in the nitrous or muriatic acid lotion may be substituted; either of these applications have been found efficacious in correcting factor, and promoting the separation of sloughs. At the same time injections of a decoction of chamomile flowers with tincture of myrrh, may be thrown into the orifice of the prepuce, and thus putrid matter removed from the surface of the glans. If we find, on the subsidence to a certain extent of inflammatory symptoms, and of pain, that the mortified parts are slow in separating from the sound, dressings of the unguentum elemi with ol. terebinth. or of the balsam of Peru, may be employed with great advantage. From the latter application I lately saw much benefit in a case where the former had been used for several days without any perceptible effect.

Cases of severe inflammatory phymosis, in which the extremity of the prepuce is very much contracted, are sometimes accompanied by a protrusion of a portion of its lining membrane; this becomes constricted in the orifice of the prepuce, an effusion takes place into its cellular tissue, and an exquisitely painful tumor, which rapidly becomes gangrenous, is the consequence. This affection is not an unfrequent occurrence in that species of phymosis which succeeds to the reduction of a paraphymosis, and particularly in boys, and in such persons as have a natural phymosis, or a prepuce longer than usual.

Early attention to a case of this kind may save the patient from much suffering and inconvenience; the tumor at the extremity of the prepuce is formed entirely of the cellular tissue, distended with serum; it ought to be punctured on its surface, and the effused fluid gently pressed from its cells; the swelling will then collapse, and the membrane by which it was covered may be reduced within the prepuce; the parts are then to be fomented and poulticed, and the recurrence of the protrusion, or rather of the partial eversion of the prepuce, prevented. This plan of treatment is, in some instances, counteracted by the extreme tightness of the orifice of the prepuce; in this case it will be expedient to divide the stricture with the bistoury, a very small incision will effect this purpose, and will enable us to reduce the tumor, and relieve the patient very considerably. However, should the part become gangrenous, the remedies detailed above must be resorted to.

In treating of inflammatory phymosis I stated, that in severe cases where there are extensive excoriations or ulcers, and the quantity of matter is considerable, and where the orifice of the prepuce is so much contracted as to prevent the discharge from escaping, a division of the prepuce for the extent of about an inch, at its upper part, is usually performed with great advantage. This operation, when resorted to in proper time, may prevent an affection of the penis, from which patients always experience great pain and danger, namely, a sloughing of the prepuce, succeeded by protrusion of the glans. This disease appears to be, in many instances, the result of the confinement of matter under the prepuce, which excites inflammation of the glans and ulceration of the internal surface of the prepuce; the ulceration extends rapidly at that part of the prepuce which is most pressed upon by the glans, at last the corresponding part of the skin mortifies, falls out, and the glans protrudes through the aperture thus formed.

In this state of the penis the sufferings of the patient are very great, and are much aggravated by the inconvenient position which the prepuce assumes; the weight of a poultice is intolerable, and even the lightest and simplest dressings afford no relief; ulceration continues to extend, matter is retained within the prepuce, and often insinuates itself under the integuments of the penis towards the pubis, producing a further sloughing of the parts. The danger does not end here, for in many the swelling of the glans increases after its protrusion, it becomes strictured

by the edge of the opening in the prepuce, and consequences equally formidable with these of an acute paraphimosis, are to be apprehended.

I have constantly observed, that cases of this sort terminate more favourably, and are attended with much less pain, when the mortification of the prepuce is extensive, and particularly if it reaches to the extremity of that part, so as to destroy its cavity; under such circumstances there can neither be stricture of the glans, nor lodgement of matter, and thus two principal sources of danger are obviated. Whenever a tendency to strangulation of the glans appears, or matter confined within the prepuce is an evident cause of irritation; these evils may be obviated by a free division of the prepuce, or by the removal of it altogether; when the prepuce is short, is healthy in its appearance, and the interval between its natural opening and that through which the glans has protruded is not great, I merely divide it with one stroke of the bistoury; but when the prepuce is large, is tumefied and thickened, and attached to the penis only by a narrow neck, its complete removal is preferable.

These operations are generally successful in relieving the patient from much pain, and sometimes in saving the glans penis from mortification; however, it is necessary to caution the young practitioner against the indiscriminate use of the knife in diseases of the penis. Before an operation is determined on, there are many points to be investigated

and duly considered, which not only relate to the nature of the local affection, but also to the state of health and habit of body of the patient; much, therefore, must depend on the judgement and discretion of the surgeon. Instances have occurred to me in which incisions of the prepuce were productive of alarming inflammation, and of tedious and even malignant ulcerations; these, however, are casualties which I have rarely met with in patients of sound constitution, and in whom suitable measures were adopted to prevent or subdue inflammation.

Mortification of the glans and corpora cavernosa penis is to be treated according to the plan already detailed; however, when the sloughs are separating, these cases are rendered exceedingly embarrassing by the occurrence of hæmorrhage, to which the vascularity and structure of the parts render them peculiarly liable, and which often proceeds to such an extent as to bring the life of the patient into imminent danger.

When profuse bleeding takes place from either the glans or corpus cavernosum, we must first endeavour to ascertain, whether the hæmorrhage proceeds from a single vessel, or from a diseased surface. If phymosis exists, as is commonly the case, the prepuce must be laid open, and retracted, so as to expose the ulcer. We sometimes are fortunate enough then to discover the orifice of an artery, and may secure it with the forceps and ligature; but more generally the blood seems to issue from a num-

ber of points, or the bleeding vessel is situated so deeply within the surrounding granulations, that it cannot be distinguished. Under such circumstances we must try the efficacy of styptic applications; dossils of lint wet with the oleum terebinthinæ may be applied to the bleeding surface, and retained there by means of a bandage, or a piece of sponge, or agaric may be fixed on the part. Pressure is often necessary to restrain a hæmorrhage from the penis, and ought always to be resorted to where it can be applied with tolerable facility. To enable us to use pressure without much inconvenience to the patient, we must first introduce an elastic catheter into the bladder; and having regulated the application and compresses on the diseased surface, we must apply a long and narrow roller to the penis, with that degree of tightness which may appear sufficient to moderate the influx of blood into the part without producing pain: this roller ought to be fastened to a bandage passed round the pelvis of the patient, and I have found advantage from having it kept constantly wet with very cold water, to which a small quantity of spirit of wine has been added. A cork being adapted to the catheter, that instrument is to be fastened to the roller on the penis, and the patient is to be instructed in the manner of discharging his urine through it.

The parts are to be allowed to remain in this state for two, three, or four days, according to circumstances; but if the catheter occasions much irritation, or if the patient complains of much pain from

the swelling of the penis, or the tightness of the bandage, or if an acrimonious and fetid discharge passes in great quantity from the prepuce, all applications must be removed, and, if necessary, renewed.

We frequently meet with cases of hæmorrhage from the penis, in which the foregoing plan of treatment cannot be adopted, or when commenced cannot be persevered in for a length of time sufficient to render it successful. When the penis is very much swelled and inflamed, and the ulcers very irritable, styptic applications, and even the most moderate pressure, are liable to occasion so much pain that we are compelled to lay them aside. In a case of this kind, if the bleeding is profuse, and has recurred so frequently as to weaken the patient, and if all our efforts to discover and secure the orifice of the blood vessel have been ineffectual, we must cut upon the dorsal arteries of the penis near to the pubes, where they lie parallel to each other, and inclose them in a ligature. If one of these arteries only is tied, there is every probability that the hæmorrhage will return, and render a repetition of the operation necessary, an instance of which occurred in the hospital within these few months.

In cases of hæmorrhage from the glans or prepuce, this operation, I believe, has seldom failed to give complete security to the patient; but when the corpora cavernosa slough or ulcerate, and bleeding

ensues, anatomy teaches us that tying the dorsal arteries would be altogether useless.

The peculiar structure of these bodies renders them very liable to hæmorrhage when their cells are opened by mortification or ulceration, but it is seldom arterial, and not often so profuse as when it proceeds from the glans or prepuce; sometimes however it is alarming, and then it is suppressed with very great difficulty. In some instances of this kind I have succeeded in tying a large artery in the corpus cavernosum, or connected with its external aponeurotic membrane; and I have been compelled in others to include the bleeding part within a ligature applied with a curved needle; but in these cases the ligature is seldom successful, so that we must chiefly rely on styptics and pressure. In two or three instances in which bandages could not be applied, in consequence of the great loss of substance, I was under the necessity of employing one of my pupils to sit at the bed side of the patient; for several hours, and make pressure on the part with the finger or hand, until the bleeding had ceased; and in a case of this kind, which occurred in one of my wards in the Lock Hospital a few years ago, the patient was so much exhausted by the repeated attacks of violent hæmorrhage, that, after all other means had failed, the actual cautery was resorted to, and with success.

Old and debilitated men are not unfrequently received into the Richmond Surgical Hospital labouring under a peculiar form of mortification of the

penis, which in no instance could I trace to a venereal origin. The species of gangrene of the penis to which I allude is not preceded by any marked symptoms of inflammation; at least if inflammation does exist at any period, it is in a degree so slight as to be generally unnoticed by the patient. The appearance of actual mortification is the first subject of alarm, and so great is the apathy with which such patients are affected, that even this is unattended to until a considerable portion of the penis has sphacelated.

Patients of this description are seldom able to give a satisfactory detail of the history of the case, and they uniformly exhibit an indifference in regard to the origin and consequences of their disease which is quite unaccountable. As far as I have been able to ascertain, the affection commences with a slight oedematous thickening, accompanied with some degree of soreness of the prepuce; in a few days a black spot is observed on or near the extremity of it, which gradually spreads without much pain, until the entire penis is destroyed; in some the gangrene extends to the scrotum and pubes, but most commonly the patient dies before this can occur.

During the progress of this disease the patient is extremely low and weak; his countenance pale and cadaverous; his tongue dry and covered with a brown crust; his pulse languid and often irregular, with a cold clammy moisture on the extremities; in some instances the bowels are inactive, but towards the lat-

ter end their liquid contents are discharged involuntarily. Patients affected in this way seldom complain of severe pain, on the contrary I have remarked, that they appear very much at ease, and although they do not sleep except when under the influence of an opiate, will often remain for several hours together without shewing a disposition to move or make any exertion; and they are evidently annoyed and irritated by being compelled to take food or drink, or to assist in changing the applications made to the diseased parts. For a few days preceding death, they are incoherent, with a low muttering delirium and subsultus tendinum, then the local disease extends more rapidly, and the sloughs are much more offensive than at the commencement.

This is clearly a disease of debility, and arises more from a morbid state of the system at large than from any local disease, although it is probable some slight irritation may cause the gangrene to fix on the particular part.

In the treatment of a patient labouring under this complaint, our exertions must be chiefly employed in restoring and supporting his strength as much as possible; this object is best attained by a liberal allowance of light nutriment and wine, which his attendants should be directed to administer very frequently. I have repeatedly tried the Peruvian bark in these cases, in all its forms, without benefit, and that medicine has so often disagreed with my patients that I have ceased to prescribe it.

where wine and nutritious broths can be taken in reasonable quantities.

From the exhibition of opium in cases of this peculiar form of mortification of the penis, I have witnessed the most favourable results; and I am certain that the lives of several of our hospital patients have been preserved by the efficacy of this medicine alone. After the state of the bowels has been regulated, we generally commence the use of opium, by directing one grain of the extract to be taken every sixth hour, and according to circumstances, gradually increase the dose during the two or three first days, until the patient takes a grain and a half every third or fourth hour. I have seldom found it necessary to exceed this quantity; but in extreme cases, and particularly if the patient's bowels were too free, two grains of opium have been administered every third hour until a slight narcotic effect was induced.

Should the bowels become torpid, an effect which opium in large doses very generally produces, a small quantity of aloes, or of the compound extract of colocynth, may be combined with it; or the opium pill may be washed down with three or four table spoonfulls of the camphorated senna mixture of the hospital.

By the judicious selection of local remedies, and their careful and regular application in this most formidable disease, much good may be effected; sti-

mulating dressings, and especially those of the terebinthinate class, are decidedly preferable to any other; they ought to be changed at least four times in the day, and always renewed after the patient has passed his urine; if the sloughs and the discharge are offensive, the effervescing or carrot poultice may be used in conjunction with these applications, or the stimulating dressings may be omitted for a day or two, the antiseptic poultices applied, and after as much of the mortified part has been cut off, as the Surgeon can remove with safety, the dressings may be again resorted to.

When gangrene has ceased to extend, and the sphacelated parts are separating from the sound, the use of opium should be gradually discontinued; however, the patient must still be supported with a generous diet, and the state of his bowels very carefully attended to; and as this disease has been known in many instances to recur, we must continue on our guard until the part is completely healed, and the strength of the patient established.

GENERAL REMARKS ON ULCERS ON THE MALE ORGANS OF GENERATION.

Every person who has attended to the practice of an hospital into which patients labouring under venereal complaints are admitted, must have observed the great varieties of form which ulcers on the penis assume, and how small the proportion of well defined

chancres,* when compared with ulcers of a different description: indeed we seldom see this genuine chancre in hospital, and it is sometimes met with under such equivocal circumstances, that it is necessary to observe nearly as much caution in deciding on its nature, as on that of an ulcer which possesses none of the distinctions assigned to that affection;† and on the other hand, ulcers of a very irregular form, which exhibit none of the characters of chancres, are so common, can often be traced so satisfactorily to a venereal origin, and are so generally succeeded by constitutional symptoms of syphilis, that I am induced to believe that in this instance, as in many others, all attempts to systematize or arrange these appearances will meet with opposition from practical observation, to which they must ultimately yield.

* It is not my wish to obstruct the investigations at present on foot, into the nature and cure of venereal diseases; but I cannot conclude these defective observations without declaring, that after a great deal of hospital experience, and much attention to the subject, I am still unacquainted with the pathognomonic symptom of the venereal sore, or with any distinctive mark, the existence of which would justify a practitioner in pronouncing that a recent ulcer on the male organs of generation was positively syphilitic. The circular depressed ulcer, with hardened basis and elevated margin, I long acknowledged as the genuine primary symptom of syphilis; but I have, within these few years, met with so many cases of ulcers accurately corresponding in appearance with this, where no venereal taint could have been suspected, and I have seen these ulcers so frequently under circumstances strongly opposed to their syphilitic origin, that I now look upon them to be as equivocal as ulcers of any other description.

† As described by Mr. Hunter.

In a succeeding volume of this work I shall lay before the public a detailed account of ulcers on the male organs of generation, as I have seen them in the Lock and Richmond Surgical Hospitals: at present I shall merely state, that in explaining their varieties, the following circumstances require attention:

1st. The situation of the ulcer, and the structure of the part affected.

The external male organs of generation consist of so many different kinds of structure, that it is reasonable to infer that ulcers must vary in their visible characters according to the texture of the parts which they occupy; thus a chancre on the glans differs from the same affection on the prepuce, and a chancre on the frenum or internal surface of the prepuce, differs very considerably from a chancre on its external surface, or on the scrotum. These facts were strongly stated by Mr. Hunter; but his observations do not appear to have made a sufficient impression on modern practitioners.

2dly. The mode of application of the virus.

The manner in which the venereal poison is applied to a part, must greatly influence the form and progress of the ulcer. If applied to the sound skin, the chancre may assume what is considered as its legitimate form, and its progress will be slow; but if the virus comes in contact with a raw surface; if in the act of coition the frenum or edge of the prepuce

be lacerated; if there is an excoriation, an herpetic eruption or any other cutaneous disease or ulcer of the penis, the application of infected matter to such surfaces may be expected to give rise to appearances in which it is probable none of the nominal characteristics of chancre will be recognized, and to which inflammation and phagedenic ulceration will be very likely to succeed.

3dly. The age and habit of body of the patient.

The first appearance and advancement of chancres will be in a great degree retarded or accelerated by peculiarities in the habit of body or mode of living of the patient. It is not to be supposed that chancres will accurately correspond in their course, and in their characters, in patients who are young, robust and plethoric; and in those who are advanced in life, whose constitutions are diseased or debilitated, or who are addicted to dissipation and intemperance. In some persons the disease will appear in a few hours after exposure to infection; in others several days will elapse before any symptom is observed; and it is well known, that inattention to cleanliness, and many other irregularities, will not only quicken the progress of the complaint, but will render it malignant and severe. In a healthy young man of a full habit, or in a person of much excitability, violent inflammation may rapidly succeed to the appearance of a chancre; whereas in the opposite state of the system, a chancre will often continue for many days without producing pain, or undergoing any perceptible alteration; besides, it will not be denied that

the susceptibility of individuals to become infected by the venereal poison is very different, and is obviously so even in the same person at different periods, and under different circumstances.

4thly. The stage of the complaint in the female, by whom the disease has been communicated.

This is a point which, in our hospital investigations, can very seldom be ascertained; yet it is one which, in my opinion, must have great influence in modifying appearances on the male organs. It is well known that constitutional syphilis rarely gives rise to any affection of the penis, unless that organ shall participate in a general cutaneous eruption; while in females, ulcers and excrescences on the labia, &c. are frequently produced by the contamination of the system. This is particularly exemplified in the case of a nurse infected by a syphilitic infant, who is first apprized of her system being diseased by the appearance of small condylomata (too often mistaken for chancres in these cases) on the apposite surfaces of the labia, whence they extend to the groins and nates.*

* Some years ago a woman, aged seventy years, resident in Smithfield, whose daughter had lain-in of a diseased child, ignorant of the nature of the infant's malady, undertook to spoon-feed it, as its mother, being attacked with fever immediately after delivery, was unable to nurse it. In a few days blotches and sores broke out on different parts of the child's body, and on the nates and thighs; the child, became hoarse, swallowed with difficulty, the tongue, the angles of the mouth, even the eyes ulcerated, and it died before it was a fortnight old.

The poor woman brought her grandchild to the hospital a few

The surgeons of the Westmorland Lock Hospital have been long acquainted with the fact, that a mor-

hours before its death; she was told nothing could then be done to relieve it, and was desired to return, should she discover any symptoms of disease on herself. In three days she applied, in consequence of a rash on her arms; it was like an itch; she was directed to bathe them frequently in warm water; to take some opening medicine, and to attend in three or four days more. Before her next visit to the hospital, she had excrescences on the labia, a few elevated blotches on her breast and back, and a deep ulcer on each tonsil. This woman was speedily cured by the mercurial treatment.

The wife of a decent farmer, who resides about four miles from Dublin, undertook to suckle a child for a citizen. She came to town to receive the child at its birth, and returned with it at the expiration of a week. An eruption appeared early on the thighs, abdomen, and nates of the infant, to which no importance was attached. The nurse's arms broke out with a teasing itchy rash; her daughter, a fine healthy girl, twelve years old, who occasionally dressed and carried the child, her husband, and her own infant, aged four months, whom she was also suckling, were all affected in the same way. They were told that they had taken the itch, and accordingly used sulphur both externally and internally without much benefit. The infant's complaints rapidly increased; small tumors formed on the nates, thighs and legs, which quickly assumed a livid colour, and having sphacelated, degenerated into offensive ulcers. The mouth and throat were ulcerated, and the child died on the day after it was brought to town for my inspection. At this time the nurse had no appearance of disease, except the rash, which had by no means a syphilitic character, and a slight excoriation about the nipples. In about eight days after the death of the infant, the whole family applied to me. The nurse had then several ulcers on the areolæ of the nipples, and numerous copper-coloured blotches on her breast, back and arms, mixed with the original eruption. She complained much of soreness and swelling of the labia, the surfaces of which were

bid state of the female genitals may exist for several months, without preventing male intercourse; and that, thus affected, unfortunate prostitutes continue their wretched occupation until their complaints have proceeded to an extent which compels them to seek for relief. It is scarcely to be expected that symptoms communicated by females labouring under

nearly covered with small condylomatous excrescences. Her infant had a few blotches on its limbs, was observed to be a little hoarse when it cried, and the angles of its mouth were slightly irritated. The girl had several excrescences on the labiae and between the nates, with extensive and painful excoriations; and the husband of the nurse was affected with deep and irritable ulcers on the corona glandis, a very general tubercular eruption, particularly distinct between the shoulders, and an ulcer on his left tonsil. This man informed me that the affection of the penis was the first symptom which appeared on him; and he declared to me in the most solemn and apparently ingenuous manner, that he had been a strictly faithful husband. They were all admitted into the Richmond Hospital, and were cured by the exhibition of mercury.

A country practitioner lately informed me, that an unmarried young woman of most correct conduct and unblemished character, who resides with her parents in his vicinity, was severely affected with condylomata on the labiae and contiguous parts. She was brought for his opinion and advice by her father, in consequence of another professional gentleman indelicately declaring that she had contracted a venereal complaint, and that it must have been the result of illicit intercourse. However my friend was perfectly convinced, after a patient inquiry, that the disease was communicated to the girl by a new-born infant, which she took charge of during the indisposition of its mother, the wife of a disbanded soldier who lived in her neighbourhood, and who was ascertained to have syphilis. This girl was subjected to a course of mercury, and recovered very soon.

syphilis in its different stages, will exactly resemble each other; and it seems not improbable that the varieties of primary affections on the male organs of generation may thus be satisfactorily accounted for.

As it is my intention to resume this part of my subject with as little delay as possible, it would be an useless anticipation to say much at present on the treatment adopted in my wards in the Richmond hospital, for the cure of ulcers of the male genital organs, which appear to arise from a venereal infection. Recent publications, however, induce me to enter my protest against the conclusion, that we ought to discard mercury as an antivenereal medicine; these publications seem to me only to prove, that mercury has been too often injudiciously administered.

We often hear of the spontaneous cure of syphilis, and we occasionally meet with instances in which venereal diseases will go through a certain course, and then disappear, without the aid of mercury; but such efforts of the constitution, or modifications of these complaints, which are irregular and hitherto not fully explained, ought not to influence our general practice.

I have long looked upon mercury as capable of exciting too kinds of action in the system, easily distinguishable; one salutary, the other morbid. When the first is produced, a peculiar fever is excited, ac-

accompanied with thirst, headach, and frequency of pulse; the salivary glands become enlarged, and their secretion considerably increased, and during these efforts venereal symptoms gradually disappear. But when the constitution of the patient resists this action, which is very often the case, if mercury is persevered in, it will have no effect on the disease, or it will impart to it new properties and characters, which may render it more obstinate and untractable. The state of the system thus induced is very different from that described above; the patient becomes languid and oppressed, with sighing and palpitation, and startings from his sleep; he has no desire for food, and his pulse becomes frequent, and sometimes irregular. The salivary glands are but little, if at all, excited; a slight degree of soreness takes place in the gums, or they become spongy, and ulcerate along their margin: and it is remarkable, that this affection of the gums will often entirely subside, return, and again subside at irregular intervals, although mercury has been continued without interruption, or perhaps administered in augmented doses, and in the most active forms.

When the deleterious effect of mercury has been once established in the system, it is surprizing how long it will continue to operate. I have frequently detected it in patients who had not taken a single grain of that medicine for several years; the mercurial action will even cease entirely for a time, and be again called forth by exposure to cold, by privations, or by intemperance; and persons thus affected will ex-

perience the same sensations as if they were actually using mercury, and on the eve of salivation.

It is the duty of the surgeon to observe with attention and accuracy these several effects of mercury, to administer it with a frugal hand, to persevere in it when he finds it useful, and instantly to discontinue it when even a tendency to its morbid action is evinced. By adhering to this rule, for some years past, I have had but few cases of mercurial diseases consequent on my own treatment; and I am inclined to believe, had a similar rule of practice been more generally adopted, that the attempts lately made to cure syphilis without mercury would have been superfluous.

It may be inferred, from a perusal of many ingenious papers on venereal diseases, and on the use of mercury, lately published, that a great revolution had been suddenly effected in this branch of surgical practice, and that until now all affections of the genitals succeeding to intercourse with the diseased, were believed to be syphilitic, and required mercury for their cure. This impression, however, in justice to many respectable individuals in the profession, with whose practice I am acquainted, and to whom I am much indebted for information on the subject, I feel myself called upon to do all in my power to prevent; being convinced that every surgeon of experience in Dublin is aware of the danger which may arise from the profuse and indiscriminate employment of mercury, and that many ulcers and other affec-

tions of the penis may be successfully treated by local remedies alone.

So long ago as the year 1797 Mr. Henthorn, the senior Surgeon to the Westmoreland Lock Hospital, was so strongly impressed with the opinion that mercury was by no means applicable to all forms and stages of venereal diseases, that he established certain principles in his practice, which, with very little alteration have been adhered to by his pupils ever since. The following general rules for the treatment of the early stages of the venereal disease, were drawn up from his clinical instructions during the years 1799, 1800, and 1801, when I was one of his dressers in the hospital.

1. Mercury ought not to be administered in any affection of the penis during the existence of acute inflammation or gangrene.

2. In sloughing and phagedenic ulcers of the penis, and in very irritable or painful primary ulcers, mercury is inadmissible.

3. Excoriations of the penis will generally be cured by simple lotions: after the excoriations have cicatrized, ulcers often remain, which may require mercury for their cure.

4. If ulcers of the penis do not heal speedily, or assume a healthy aspect under a mercurial treatment; or if they should spread during the use of

mercury, that medicine must be discontinued, and change of air, with the nitrous acid, or sarsaparilla, recommended.

5. In the commencement of bubo, mercury may be administered, and is often auxiliary to the resolution of the tumor; but, if the inflammation of the gland increases, the disease must be treated as common phlegmon; mercury must be omitted, and not again employed until the tumor has subsided; or, if it has suppurated, until the ulcer has almost healed. All ulcerations which succeed to buboes will heal more speedily where mercury is not exhibited; and mercury ought never to be administered in any case of extensive ulceration in the groins; those affections are always tedious, and must be treated with nitrous acid or decoction of sarsaparilla. Removal from the hospital, country air, and nutritious diet, are indispensable.

(To be continued.)

PART II.

MISCELLANEOUS COMMUNICATIONS

ON

MEDICAL AND SURGICAL DISEASES.

A REPLY

TO

CERTAIN ORAL AND WRITTEN

CRITICISMS,

DELIVERED AGAINST

AN

ESSAY ON LITHOTOMY,

PUBLISHED IN THE JANUARY NUMBER OF THE AMERICAN MEDICAL
RECORDER.

By GRANVILLE SHARP PATTISON, Esq.

"Unnecessarily to mortify the vanity of any writer, is a cruelty which
mere dulness can never deserve; but where a base and personal malignity
usurps the place of literary emulation, the aggressor deserves neither quar-
ters nor pity."—SHERIDAN.

(Inserted in the American Medical Recorder for July, 1820.)

PHILADELPHIA, 1820.

REPLY.

THE unshackled discussion of political topics, is not more important to the public weal, than the unrestrained exercise of just criticism is salutary to the investigation of scientific truth. In both, liberty may degenerate into licentiousness; in both, public good may be forced to succumb to private advantage; and truth, however important, assassinated by traduction, may be scouted by popular odium, or silenced by the superciliousness of favoured ignorance.

It happens fortunately, however, for the interests of liberty and science, that the enemies of both, insidious as they may be in their attacks, are easily detected, and that their impotent efforts tend, in most cases, only to strengthen the prosperity of the causes against which they have been levelled. This observation bears with particular force on literary criticisms. If unjust, the individual aggrieved, has it in his power to appeal; and if he has truth to support him, there can be no doubt, that by the mightiness of her pleading, and the justice of public feeling, his doctrines, which have been carped at and abused, will be presented under a clearer aspect, more fully understood, and finally established.

Anonymous writing is usually employed for conveying to the public, critical observations on the works of letters and science. Usage, from time immemorial, has sanctioned, as consistent with the character of a gentleman, this kind of writing:—but honour

demands, that these criticisms should be composed in the spirit of liberality, and published in regular journals. When written with a malicious feeling, for the purpose of injuring the character of a cotemporary, and, more especially, when published out of the regular channels which are employed for the dissemination of scientific communications, they lose all respectability, and merit the odious denomination of libels, equally inconsistent with the principles of honour, which should regulate the conduct of the gentleman, or the love of truth, which should direct the observations of the man of science.

In the justice of these remarks, I feel persuaded, that every man of principle and correct feeling, will agree. They have been suggested to my mind, from the consideration of certain oral and written criticisms, thrown out against the observations contained in the essay on the subject of lithotomy, I published in the January number of the Medical Recorder, and on the refutation of which I now propose to enter. But in order to render the subject more perspicuous, it may, perhaps, be judicious, to preface the following remarks, with a short history, of what occurred previous to, and immediately after, the publication of my essay.

The cause of truth, as well as the duty I owe myself, leave no alternative; my professional character must be defended or abandoned; but feeling shall be spared, and decorum observed, whether merited or not; truth being the only legitimate object in all scientific discussions.

In a conversation which I had with Dr. Physick, shortly after my arrival in America, I took occasion to mention the prostate fascia, as a discovery, and attempted to explain, from its connections, the causes of urinal infiltration. The Doctor, with that lively interest which he takes, in all that belongs to his profession, entered warmly into the subject, and stated to me, that, although not aware of any anatomical structure, which would modify the dangers of urinal effusion, he had been in the habit, for many years, of introducing through the wound, a gum catheter into the bladder, with the view of allowing a free passage for that fluid; and that, since using this instrument, the success of his operations had

been very great. It was agreed, that I should, the first opportunity which offered, dissect the fascia. Some weeks afterwards, being present at the examination of the body of a boy, whom the Doctor had attended, on account of false passages in the urethra, I took occasion, in his presence, and in that of Drs. Chapman, Dewees, McClellan, and several other gentlemen, to cut into the perinæum, and to give a partial view of the fascia. The parts were, however, in this subject, in such a gangrenous state, from urinal effusion, that the exhibition here given of the prostate connections, was far from being a satisfactory one. It was sufficient, however, to satisfy Dr. Physick as to the existence of a fascia, of which *he before knew nothing*, and drew from him a wish, that I would endeavour, at an early date, to dissect it in a subject, where the parts were in a state of health. The other gentlemen expressed with equal warmth, their conviction of the reality of my discovery.

Some days after this dissection, Dr. McClellan called with Colles's Treatise on Surgical Anatomy, and stated to me, that an individual who had been present at the exhibition of the fascia, had brought that work to Dr. Physick, and had endeavoured to convince him, that what I had claimed as a discovery, was not due to me;—that the fascia was clearly described by Mr. Colles, in the passage at which he had folded down the leaf. The Doctor's ideas of the connections of the fascia, being from the imperfect dissection given, only general, he was unable himself to say, whether the description to which his attention had been called by this discoverer of my making unjust claims, referred to the fascia which I had shown, or to something else. I had no difficulty in convincing my friend Dr. McClellan, that it referred to a part altogether distinct,—one, which was regularly and constantly described by anatomists.

Reading Mr. Colles's work, which was left with me, I found as I have stated in my essay, that that author does, in a different chapter from the one marked, make some observations on the prostate fascia. So soon as I had satisfied myself, that I was not the first who had seen it, I called on Drs. McClellan and Eberle, and

stated to them my conviction, that although Mr. Colles did not, in the passage to which Dr. Physick's attention had been called, allude to the prostate fascia, that still, that anatomist had seen it, though he "neither was aware of its connections, its importance, nor its uses." These gentlemen would not even agree with me in this, and still insisted, that the passage in Mr. Colles's work, which I supposed referred to the prostate fascia, and which Dr. Gibson read to his class, and which W. has published in the last number of the Recorder, was intended to describe some distinct part.*

Accompanied with Dr. McClellan, I visited Dr. Physick with the book, and with the most perfect candour, assured him that I was satisfied Mr. Colles had seen the fascia; and then went over with him that gentleman's description. Dr. Physick's observation was, that it was so confused, it was impossible to understand exactly what the author meant; and added, most unequivocally, that his having, or not having seen it, would in no measure take from the honour which was due to me, for being the first who had brought it before the profession, in a highly interesting and important practical point of view.

I heard nothing more of the prostate fascia until after the publication of my essay. Before it went to press, I took occasion in two different subjects to exhibit its connections, and demonstrate its existence in the presence of Drs. Physick, Parish, Hartshorne, and McClellan, and so satisfied were they of its presence, that they allowed me in my paper to make use of their names, with the view of satisfying the sceptical as to its existence.

Immediately after the publication of the January number of the Recorder, the subject of the prostate fascia was again brought on the

* Dr. McClellan in support of this opinion stated, that as Mr. Colles described his fascia as a layer of the triangular ligament, and as the levator ani muscle was interposed between that ligament and the one described by me, he must mean some other layer of fascia. I granted the correctness of my friend's objection, but insisted, that although in relation to this point, and others in the description, Mr. C's description was incorrect, that still I had no doubt but that the same fascia was meant.

tapis. And, although I had myself, been the first who had shewn that Mr. Colles had seen it, so little was that gentleman's book understood at this period, even by those gentlemen, who now declare, that his description is the clearest and most perspicuous possible, that they never attempted to take from me that discovery which they, incorrectly, conceived I had claimed, but endeavoured by childish jests and ill-tempered sneers, to make the world believe that the prostate fascia was a mere creation of my imagination, and that any man who could use a scalpel, could make a fascia just as easily, as a modeller in wax could make a nose. This pleasantry, though at my expense, as it could neither affect me nor change the structure of the perinæum, gave me no concern,—the thing denied, existed; and that truth, which they could not discern, was both capable of demonstration, and of vast importance to be known.

Unfortunately for the harmony of all concerned, Dr. Physick, when he came to the anatomy of the perinæum, regulated by a love of truth, demonstrated the "prostate fascia." This demonstration put an end to all mirth, and conveyed a most melancholy illumination to the minds of those who were before blinded. There was no longer a doubt that a fascia existed, which required for its formation, not a petty dissector, but the great "*horlogier de la nature*." But this was not the only enlightening effect produced by this demonstration. Mr. Colles's work was taken up anew, and, upon a re-perusal with minds illuminated, it was discovered, that his description was the clearest possible, and that I had been guilty of an unhandsome plagiarism, in claiming that, which belonged to another.

Having gone over this short historical introduction, I am now prepared to take notice of the different tangible attacks which have been brought forward against the essay. I shall confine my observations to Dr. Gibson's lecture, the anonymous letters published under the signature of Aristides, in Mr. Poulson's newspaper, and the criticism, which appeared in the last number of the Recorder.

Every Professor is bound, in the fulfilment of his duty, to guard his students, against the reception of that, which he conceives to be either false or pernicious, in doctrine, or practice: and

every man of science, is entitled through the media of scientific journals, to publish anonymous liberal criticisms, on the speculations of others in science. But neither the professor nor the man of science, who would wish to rank as a gentleman, is warranted to publish in a commercial newspaper, an anonymous and abusive criticism, against the doctrines of a cotemporary, that have been delivered in a manly and open manner, and published through a proper professional organ. It has been unjustly surmised, that I myself was the author of certain newspaper publications, which mentioned my name in flattering terms. But those who have assumed the liberty to make such insinuations, know them to be without foundation. As a man of honour, I declare, that I am exceedingly unwilling to have my name brought forward, either favourably or unfavourably, by anonymous newspaper writers; and that in the whole course of my life, I have never written or published a syllable to which I did not affix my signature.

As the whole profession have not had the advantage of hearing the remarks delivered by Dr. Gibson in his lecture, or of reading the criticisms of Aristides, it will be necessary, for me, before I attempt a refutation, to state shortly the observation of the professor, and of the anonymous newspaper writer.

I must confess, that the lecture delivered by the learned professor, was a most remarkable one. He began by stating, that having "accidentally" taken up Colles's Surgical Anatomy, a few days before, he had discovered that, that author had given a most luminous description of a fascia connected with the prostate gland. I felt pleased with the lecturer's zeal, in satisfying his class on this head, for I naturally concluded from the repetition he employed, and the anxiety he displayed in convincing his students that Mr. Colles had demonstrated the prostate fascia, that although he would give me no credit as a discoverer, still he would go along with me, in my views, as to the great practical deductions, which were to be drawn from the connections of this fascia. Judge of my disappointment when I heard the professor begin with equal warmth, after he conceived, that he had persuaded his auditors of the justness of Mr. Colles's claims, to assure them that the existence or non-existence, of the prostate fascia, was a

matter of not the slightest practical importance. 1st, It was of no consequence, because no gorget was made sufficiently large to cut the whole of the prostate gland; 2dly, it was a matter of no importance, for if this impossibility could be accomplished, still the division of the base of the prostate, would have no effect in producing urinal infiltration; and lastly, he inculcated, that urinal infiltration was not attended with danger.

I am aware, that some ill-tempered people, have supposed that the whole scope and bearing of the professor's discourse, was to persuade the students, that I had been guilty of an unhandsome plagiarism, from Mr. Colles, and like a silly plagiarist that I had purloined that which was perfectly useless. But, I must do the individual referred to the justice to state, that he observed in relation to my name, and claims, the most delicate and profound silence.

The newspaper critic, if we can believe him, is a philanthropist. His motto is rather a remarkable one.

"In nostros fabricata est machina muros."

Some of my learned brethren have been at pains to unravel its bearing, but I am quite satisfied that all their explanations are very far indeed, from tallying with the one the author wished it to convey. "Nothing short of the interests of humanity," could have induced Aristides,—honest man! "to come forward in a newspaper." Yet this noble and generous sentiment, makes him sacrifice his delicate feelings. Every man who reads this introduction, must be ready to exclaim, wonderful benevolence! Surely, the individual who has induced this excellent and humane gentleman, to write for Mr. Poulson's newspaper, must be some city pest! some abominable quack, who attempts to poison our citizens. This I am aware is the natural inference, which will be drawn from Aristides's introduction, but most certainly it is not a correct one. I am very fallible, and may most assuredly have been mistaken in my views. But certainly I have delivered these in a regular, professional and gentleman-like manner. And even allowing, that the sentiments which I have taught are erroneous, they are assuredly not of a character to desolate our population, and to call for the interference of a philanthropic Aristides, for their suppression.

It is said that the first sentence of an essay is the most diffi-

cult to compose, and, as the tenor of the letter seems to have nothing to do with humanity, but is written merely to satisfy the commercial public of Philadelphia, that Mr. Pattison is no discoverer and a man of little experience in his profession, we are warranted to suppose, that the author, being at a loss for an initial sentence for his letter, took one, which, in a happy moment of inspiration, he had composed for another purpose, and which, although foreign from the intention of his letter, he conceived too good, to be lost to the public.

In conclusion, the anonymous author, with the view of damaging the unfortunate Scotsman, endeavours to rouse the national feeling of Americans against him, and finishes his *humane epistle*, with this imposing assurance, that the American public will not be imposed on with impunity, in other words that they are not to be "*humbugged*!" by an ignorant foreigner.

The last criticism is before the profession, and it is therefore unnecessary for me to make any introductory remarks upon the observations which it contains. When I received at Mr. Webster's store, the number in which it is published, I felt so anxious, I must confess, to see what this regular criticism contained, that I took a peep into it, as I walked home. I was aware, that its author was my anonymous friend Aristides, and as his previous publication demonstrated at least the disposition to be ill-tempered and abusive, I expected that he would have written a very severe critique.

It is a fact, which the readers of reviews must have remarked, that if there is any bitter observation, this is generally kept for the last paragraph. It makes a good finish, and sends the reader to bed well pleased with the humour of the author. The final paragraph was, therefore, the one I selected for my walking examination. It is certainly an attempt at sarcasm, but most assuredly a feeble one. It takes leave of me as a "*child of science*," assuring me that had the author had time after the preceding laborious production, he would here enter on my practical deduction. This it would doubtless be too much to expect from him, for one three months, and the public and myself, are therefore doomed to wait for an extension of the critic's labours, until another opportunity.

Having read the author's apology for his not having proceeded with the criticisms, I was certainly excusable, in going home in the belief, that the Recorder of which I had just become possessed must contain a very long review of my essay, and one in which there was a great deal of original matter. So soon, therefore, as I had composed my spirits with a cup of tea, I retired to my study, to spend the evening in its perusal. My astonishment was not a little, when I discovered that the paper contained only seven pages, and of these forty-three lines only were made up of original matter. I recollect once of hearing an old story of a professor who found it no easy matter to deliver his lectures, apologizing to his class, for not giving them a valedictory, nearly in the following words: "Gentlemen, I intended to have written you a very fine lecture, but to tell the truth, I am so morally and physically exhausted by my exertions, that I have been unable to accomplish it." I have no doubt, that W. was influenced by similar motives. He intended, I sincerely believe, to have written a very severe and spirited attack upon my opinions, but he became so morally exhausted in composing the forty-three lines which are original, and so physically fatigued by copying the six pages from Mr. Colles's work, and my essay, that his amiable intentions were frustrated.

The tenor of the criticisms, which have been brought against my essay, may be divided into two classes.

1st. Those which go to state that I have claimed as a discovery, that which belongs to Mr. Colles.

2d. Those, which attempt to disprove my practical deductions.

I shall divide my reply into two parts; in the first, I shall endeavour to refute those observations which belong to the former criticisms, and in the second place, attempt, in opposition to what has been brought against them, to establish and confirm those practical doctrines, which, I conceive, may be drawn from the anatomical structure of the perinæum.

I might give a very short answer, to those criticisms which accuse me of being guilty of claiming as a discovery, that which belonged to Mr. Colles. I have in the most candid manner possible, allowed in my own essay, all that is due to that gentleman.

I there, distinctly and clearly state that, "*that anatomist has seen it.*" In the garbled extracts which Aristides gives in the newspaper and Recorder from my essay, he wishes to convince the public, that, I do lay claim to the discovery, and in proof, makes quotations from the first part of the paper, to establish his assertions. I no doubt there employ the expressions quoted, "*a new fascia.*" "*this new fascia I named the fascia of the prostate gland.*" But Aristides must have been aware, that in using such terms, I am giving a history, a diary of my thoughts. The essay contains, in fact, a historical account of my thoughts on the subject of lithotomy. It is, distinctly, stated in the following words; "*in continuing the account of the diary of my thoughts in relation to lithotomy,*" a passage which immediately precedes the expressions quoted. I would ask the question, was it possible for me in writing a diary of my thoughts, to have used any other expressions? It was really, and truly to me, a discovery. It was considered as such, by all the professional friends, with whom I conversed on the subject in Edinburgh, London and Paris; and I still continued to believe it was so, until I read Mr. Colles's work in Philadelphia. I would demand, if there was any thing disingenuous, in my conduct after I read Mr. Colles's essay. His book had been pryed into by those, who were most anxious to take from me the honour of the discovery, but they were unable to understand that he had really seen the fascia. It was left for me to make that discovery, and when I did so, I was the first to proclaim it to Drs. Physick, Eberle and McClellan. Every just mind, must therefore allow, that my conduct in relation to Mr. Colles, has been most candid and honourable.

I trust, I have by these facts proven, that I have not claimed the fascia as a discovery, and shall now show, that had I been desirous of appearing before the profession, in the character of an anatomical discoverer, I might, with equal propriety have done so with those, who are universally acknowledged as such.

I suppose, when I state, that William Harvey is the discoverer of the circulation of the blood, and Gaspar Asselius of the lacteal vessels, that it will be allowed, that I am making a correct statement. But is not the following assertion equally consistent with

truth, that Andrew Cesalpinus, described the circulation through the lungs, and that Realdus Columbus, La Faye and Garengeot, all wrote, more or less, distinctly of the movement of the circulation prior to Harvey; they understood it, without drawing clear physiological inferences from it, in the language of the biographer of Harvey,—"Il étoit réservé à Harvée de développer cette vérité et l'on ne peut, sans injustice, lui refuser la gloire d'en avoir tabli la preuve jusqu'à la démonstration."

It may, with equal truth, be remarked in relation to the discovery of the lacteal vessels, that Hippocrates, Plato, Aristotle, Erasistrates, Herophilus, and Galen, had seen them; but Asselius was the first who saw them physiologically; and it is he, therefore, who is honoured as their discoverer. If physiological inferences are necessary to constitute an anatomico-physiological discovery, certainly surgical deductions are equally required to establish an anatomico-chirurgical one; and I trust, that even W. will allow, that I have been the first to draw these inferences from the connections of the prostate fascia.

Again, it would appear, that previous to the publication of my sentiments regarding the connection of the prostate fascia, none of the anatomists in Europe, to whom I had demonstrated it, were aware that such a fascia existed; and in America, no surgeon had ever thought of this connection. Dr. Physick, professor of anatomy in one of the first medical schools in the United States, a man who deservedly stands at the very head of his profession, in this country, allowed that he knew nothing of it before; and the professor of surgery in the same institution, does not, I believe, pretend that he was aware of it, until after Dr. Physick's demonstration, when he "*accidentally*" took up Colles's Surgical Anatomy.

W. states that in the 5th Number of Mr. Charles Bell's Reports, there is a plate given by him, to illustrate an essay by Dr. Gairdner, on the anatomy of the parts concerned in the lateral operation, and that the letter L designates "*the fascia which surrounds the prostate gland, and which afterwards covers the inside of the levator ani, and obturator internus.*" I have not been able to obtain a sight of this number of Mr. Bell's Reports, and can say

nothing of the fascia alluded to by Mr. Gairdner. It is impossible for me to say from the quotation, whether it is intended for the one I have described or not. But this will in no measure militate against my claims, as the work quoted was not published until eighteen months after I had made public, as a discovery, the prostate fascia.

In answer to the next original sentence in W's paper,—“in fact, these parts appear to be spoken of, both by Mr. Colles and Mr. Bell, as matters of course, as things which have been long known, and to claim which, as discoveries, would undoubtedly seem in their eyes ridiculous in the extreme.” This is saying in very distinct terms, that not to be acquainted with the prostate fascia, is to be a mere tyro in anatomy and surgery.

I think this sentence has been written by W. without his being aware of all its bearings. I am satisfied, that no man, American or European, who is acquainted with Dr. Physick's professional character, will say, that he is ill-informed on the subject he professes, or the one which he practices; and from what I know of W. I can with perfect confidence assure the profession, that he is the last man living, who would wish the professor of surgery in the University of Pennsylvania, to be considered an ignoramus. If W., therefore, had only remembered that neither the professor of anatomy nor even Dr. Gibson were aware of the existence of the prostate fascia until I came to this country, I hardly think he would have insinuated, that every surgeon short of a fool, was familiar with it.

Every man who reads my essay with an unprejudiced mind, must be satisfied, that it is written, not for the purpose of laying claim to an anatomical discovery, but simply with the view of enforcing what I conceive to be highly important practical maxims and observations. In concluding it, I observed, “*the only claim I will make, and in this I am confident I will be supported, is, that until the present, no rational explanation has been given of the manner in which the urine is effused, and consequently, no operation has been philosophically proposed to prevent it.*” I shall not insult the understanding of the reader, by reasoning longer on this part of the subject. I feel perfectly satisfied, that every indivi-

dual whose good opinion is worth coveting, will be ready to award to me, much more than I have claimed.

The reader, in recalling to mind the history of my own experience, in lithotomy, as delivered in my former essay, will observe, that in the only cases where I ever had an opportunity of making dissections after death from that operation, I discovered gangrenous supuration betwixt the bladder and rectum, which, unquestionably, arose from the infiltration of urine into the cellular structure, which connects the bas-fond of that viscus with the gut; and that these operated as the cause of death, there can be no doubt. These facts are, I conceive, of themselves, quite sufficient to establish the correctness of my axiom, that one of the greatest dangers of the operation, is the effusion of urine. But in refuting the criticisms, which have been circulated against my opinions, I am unwilling to place any force, either in my own experience or assertions. I am desirous to confirm the correctness of my doctrines, by bringing forward to their support, passages from the works of those, who are, with justice, considered the great fathers of our art, and who, writing without a bias to this or the other maxim, must be considered as unprejudiced.

It will not be denied, I believe, that one of the greatest dangers of the *apparatus altus*, is the infiltration of urine, into the cellular substance which surrounds the bladder. If it be allowed, that the effusion of that fluid from an opening made into the bladder above the symphysis pubis, will, from its irritation, produce gangrenous inflammations, and suppurations in the cellular substance, with which it comes in contact, it can hardly be believed, that it will not produce precisely the same effects when allowed to infiltrate from a wound made into the shoulder of the viscus.

Richerand, in his *Nosographie Chirurgical*, Tome III., speaking of urine being effused into the cellular substance, mentions it in the following words: “*accident mortel toujours redoutable après la taille hypogastrique.*” And again, “*alors elles se feroient jour par la plaie supérieure s'infiltreroient dans le tissu cellulaire, et causeroient une gangrène mortelle.*” These observations of Richerand's, go to prove, that the effusion of urine above the pubis into the cellular substance, is an “*accident mortel.*”

one which gives rise to a "*gangrène mortelle*." From the next quotations it will appear, first, that urine produces the same effects when it infiltrates into the cellular substance, which connects the bladder to the rectum; and secondly, that this fluid will be apt to become effused, if the wound be continued either through the base of the prostate gland, or made through the prostate fascia, directly into the shoulder of the bladder.

Cheselden, in attempting to imitate the operation performed in Holland with the most extraordinary success by Rau, cut directly into the shoulder of the bladder, necessarily dividing the prostate fascia. The melancholy detail of the unhappy result, speaks volumes in proof of the dangers of dividing that fascia. Camper, in his *Anatomical Demonstrations*, thus records it. "*Cheseldenus, ut omnia tentaret, vesicam aqua hordei implebat, quantum aëri ferre proterant; dein vesicam incidebat, sed infausto successu, propter urinam inter vesicam et portas vicinas remorantem, unde gangrena, qua ex decem octo moriebantur.*" The operation of M. Foubert, which entered the bladder at the same point with the one described above, was equally unsuccessful. Sharp, in his *Critical Enquiry*, &c. details its fatal consequence; but he, like every author, who has considered the subject, gives an erroneous explanation of the cause. "Another great evil," he observes, "attendant upon a wound of the bladder in that part, is the want of a free egress for the urine, which insinuates itself into the cellular membrane, producing abscesses and gangrenes, which often prove fatal. Or, if they do not destroy, yet by lying on the rectum, produce a slough there, and thus form a communication between the bladder and rectum." To obviate this danger, M. Foubert invented, or rather revived the practice of Franco, and introduced a gum catheter into the bladder.

I should hope, that I have been enabled by the quotation of these passages to prove the justness of the opinion I have delivered, as to the great dangers which arise from urinal infiltration, and shall now bring forward some other quotations, which will further establish this doctrine, and at the same time prove, that although aware, of the great dangers which arise from infiltration, surgeons were not aware of the true reason, why a large wound

which divides the basis of the prostate gland, and enters the shoulder of the bladder, is usually followed by them.

M. Sabatier, in his work "*De la Médecine Opératoire*," in attempting to explain the cause of urinal effusion, after those operations in which the shoulder of the bladder is cut, thus expresses himself. "Parce que l'écoulement des urines permet à la vessie de se contracter, et parce que la plaie de ce viscère cesse d'être parallèle à celle des graisses, et des tégumens. Ce défaut de parallélisme, augment la disposition aux infiltrations intérieures."

Desault, in his "*Ouvres Chirurgicales*," gives nearly a similar explanation of the cause of urinal effusion, "d'un autre côté, celui de ne pas établir de parallélisme entre l'incision extérieure des tégumens qui est oblique et celle du col de la vessie et de la prostate, que se trouvè alors horizontale. De-là la possibilité des infiltrations par les obstacles qui les urines trouveront à s'écouler." The last quotation, which I will give, in proof of my assertion, that there has been no correct statement given, until the present, of the cause of urinal infiltration, is taken from one of the very last essays which have been published, on the subject of lithotomy. Mr. Samuel Cooper, criticising the memoir of Scarpa, which recommends small wounds, says: "indeed, wherever urinal infiltrations do happen, I believe, that they proceed (not from the shoulder of the bladder being cut), but from a totally different cause, viz. from the incision of the skin being too small, and too high up, and from the axis of the internal part of the incision, not corresponding with that of the external wound."

Having thus established, in opposition to the assertion made against them, the two facts, 1st, That urinal infiltration is attended with great danger, and, 2dly, that the reason why it is more apt to follow an operation, where the wound made into the bladder is large, rather than one where it is small, has not until the present been explained. I come next to overturn the assertion of Aristides, "that my precept," not to cut the shoulder of the bladder, is in direct opposition, to the advice of the best authorities in Europe and this country.

From a rational anatomical explanation of the causes why urine is more apt to infiltrate in those cases, where the basis of the pros-

tate is cut, rather than in those, where it remains undivided, having never until the present been offered; I am prepared to grant, that, some of the most eminent surgeons, both in this country, and in Europe, have advocated a different practice from the one I have recommended. But, I feel assured, that I am supported by truth, when I state, that the practice of making large wounds into the bladder, has been followed with such unhappy consequences, that a majority of the very first surgeons, of this, and of the three preceding centuries, have, without any philosophical knowledge of the cause, been taught by the lessons of experience, to advocate the plan, of entering the bladder, by a small, in preference to a large wound.

Pierre Franco, one of the most eminent surgeons of the 16th century, and a man, who had, perhaps, more experience in lithotomy, than any surgeon of his time, thus expresses his opinion, in his work, entitled *Petit traite contenant Vue de parties Principales de Chirurgie*, &c. "J'avoit que la moindre incision soit la meilleure;" and again, "Bref il est requis de tenir mediocrite." Brownfield, a man whose surgical knowledge is not disputed, argues, strenuously, against cutting the base of the prostate. "Nan tametsi aliter visum sit multis scriptoribus, fateor tamen, me non posse non putare valde perniciosam esse, partem, membranosam vesicæ sauciari, et si nihil aliud affert mali, fistulas orituræ maxime est verisimile." Scarpa, the great surgeon of Italy, assures us, that the shoulder of the bladder cannot be cut, "without the danger of occasioning urinary fistulæ, and gangrenous suppuration, in the cellular substance situated between the bladder and rectum;" and in another passage of his work, he thus writes; "if an incision was made through the base of the prostate, and into the orifice of the bladder, it would infallibly occasion infiltrations of urine, into the cellular substance, between the rectum and bladder, and subsequent gangrenous abscesses, fistulæ, and other severe accidents." Were I anxious, for further written proof, in support of my statement, I might quote from the works of Le Cat, Callison, &c. but this is, I conceive, unnecessary, recalling to my reader's mind, the fact, which I brought forward in my former essay, that two of the most eminent surgeons of Europe, Mr. Astley Cooper, and M.

Dupuytren, advocate, although on erroneous principles, small wounds. I trust, it will be allowed, I have made good my position, viz. that some of the very first surgeons of this, and the three preceding centuries, although not aware of the anatomical causes, why urine should be more apt to infiltrate after an operation where the wound is large, rather than after one, where it is small, have been taught by experience, that such is the fact.

One of the assertions delivered by Dr. Gibson in his lecture, was, that no gorget was made sufficiently large, to cut the whole of the body and base of the prostate gland. The professor will, I trust, excuse me, when I state that this assertion of his, is perfectly gratuitous; that it is incorrect may, I think, be readily demonstrated. The anatomical fact, that the breadth of the prostate gland, very rarely, in a state of health, measures above seven lines, cannot be disputed. The statement, that many gorgets are made fourteen lines in breadth, is equally consistent with truth. Now, such being the case, I am at a loss to understand, how the ingenious professor will satisfy any man of common sense, that he can carry a sharp cutting instrument, fourteen lines in breadth, through the prostate gland, which, even in extreme cases, measures only seven, and still leave a part of it uncut. The assertion appears to us, to carry with it, such a palpable contradiction, that we are astonished it could have been entertained for a moment by Dr. Gibson. The prostate gland is composed of a very tough substance, one, which is not easy of division. It lies unsupported in the dead body, in *perinæo*, and consequently, when we carry a gorget into the bladder, in the subject, the two causes above mentioned, will operate, in allowing the instrument to enter, without making a division of the gland, proportionate to its breadth. Of this fact, any man may satisfy himself, and, I should hope, that Dr. Gibson, in delivering the assertion above quoted, was deceived himself, and was not desirous to mislead his students. I will take the liberty of recalling to his mind, the aphorism of De l'Ambert, that "there is no analogy between living matter, which is active, and dead matter, which is inert." When the instrument enters

the bladder, in the living body, there is no yielding of the prostate; it is not there unsupported, but is in fact fixed and pressed down, upon the sharp edge of the gorget, by the levatores ani muscles. It is self-evident, that if there is any disproportion now betwixt the extent of the wound and breadth of the gorget, that this will be in favour of the size of the wound.

The correctness of the second assertion of the professor, that even allowing, that it were possible to cut the basis of the prostate gland, that still it would be a matter of no moment, and would have no effect on urinal effusion, is equally erroneous, and can be proved as such, in a very few words.

I need not recapitulate here, the description of the connection of the prostate fascia given in my former essay. I have, since I came to this country, demonstrated it to above four hundred persons, and all of those, with whom I have had an opportunity of conversing, have given their hearty and cordial assent to my two-fold position, "that the prostate fascia separates the perinæum from the cavity of the pelvis, and that the basis of the gland remaining uncut, it is physically impossible, for one drop of urine to infiltrate into the cellular substance, which connects the bladder to the rectum." It may be said, that it is merely my assertion; it is true, but it is an assertion, which, if false, I would not be likely to make, as it would be refuted by the four hundred individuals, who have been present at different times, when I made the dissection of the perinæum, and one, the correctness of which, I shall at all times be happy to demonstrate on the subject, to any of my professional brethren, who may desire it.

It may appear strange, if the verity of what I have advanced be substantiated, that the professor of surgery, could have made an assertion so directly opposed to it. I trust, however, I shall be able to explain this, without suspecting him of conduct so unworthy of his situation, as that of intentionally deceiving his pupils. There was something upon the table, which he told us, had the fascia shown upon it. If it was really dissected, it did not come under the sphere of my vision, and I am, therefore, charitable enough to suppose, that, as the gentleman who first brought Mr. Colles's work to Dr. Physick, mistook his description

of another fascia for the one described by me, Dr. Gibson was equally misled, by dissecting another layer of fascia, instead of the one connected with the prostate gland.

I have thus gone over, in order, the different charges which have been advanced against my essay. I fondly, and confidently hope, that I have clearly refuted them to the satisfaction of my professional brethren. The task which I have had to perform, has not been a difficult one; some of the criticisms may have been marked by ill-temper, but none of them, assuredly, by professional erudition, or mental acuteness. I have really felt sorry, that the critics have not brought forward some ingenious arguments against my doctrines, for had they done so, a more elaborate train of reasoning would have been required from me, for their refutation; and as the brightness of truth is like the brilliancy of the diamond, the more it is examined, the more refulgent; so their criticisms, if of a superior character, would only have tended to establish and confirm my opinions. So satisfied do I feel of the justness of this observation, that I am unwilling to take leave of my critical friends, without assisting them, with, at least, one observation, which certainly carries with it a much more powerful inference against my maxims, than any of those puerile objections, with which their minds have furnished them. It has been stated, that Cheselden in his third, and most successful operation, carried a knife into the bladder, behind the prostate, and cut the body of the gland outwards; now if this statement was a correct one, it would, of itself, be sufficient to tear up the very root of my reasonings. If Mr. Cheselden, in his most successful operation, cut the basis of the prostate gland, urinal infiltration could not be one of the great causes of danger, and consequently, cutting, or not cutting that aponeurotic expansion, which, entire, renders the infiltration of urine impossible, would not be a matter of such importance as I have insisted on. I am aware, that many believe, that Mr. Cheselden did perform his last operation in the manner which I have described, but I feel persuaded, that although this is a generally received opinion, it is not consistent with the truth. 1st, I think it can be disproved from the difficulties opposed to the perform-

ance of such an operation, and I have no hesitation in asserting, that was a dextrous surgeon to operate on twenty living subjects, and proceed with the view of executing his operation on the principles which were supposed to regulate Mr. Cheselden, that not in more than one out of the twenty, would the wound extend through the base of the gland, although he might himself believe, that this was accomplished in every instance. On the dead body, the operation may be much more easily accomplished; but even here, experiment will demonstrate, that supposing you have divided the gland, and really done so, are two very different things.

2dly, I conceive, that the fact, that Mr. Cheselden only divided the whole body of the gland, leaving the basis entire, is settled by the account of his operation, which is published by his pupil and assistant, Mr. Sharp. This gentleman, in his *Treatise on the Operations of Surgery*, thus speaks of it:—"This wound (external) must be carried deeper between the muscles, till the prostate can be felt; when searching for the staff, and fixing it properly, if it has slipped, you must turn the edge of the knife upwards, and cut the whole length of the gland, from within outwards." From this, it is evident, that the whole length only of the gland was divided; and that its base was left uncut, is satisfactorily proven by another remark of Sharp's; "there must be laceration, as in the old way (*apparatus major*); but in the one case, the laceration is small, and made after a preparation for it, by an incision; and in the other, all the parts I have mentioned are torn, without any previous opening." Thus we are in the plainest language informed, that the only difference betwixt this method and the Marian one is, that a small wound prepares the parts for dilatation; that this is required in both. If the base of the prostate and shoulder of the bladder were divided, there could be no occasion for laceration.

From these facts, I do conceive, that we are perfectly warranted in supposing that in the great majority of the instances, where Mr. Cheselden performed his operation, he left the base of the gland uncut, that in a few of them, it was divided, and that the fatal cases were the ones where this occurred.

I shall conclude this Essay by calling my readers' attention to Rau's operation, as I conceive it affords strong and unanswerable evidence, in support of the justness of my doctrines. It is well known, that the celebrated Dutch lithotomist, made a secret of the parts he divided, and as death never occurred after any one of his operations, although he cured fifteen hundred patients, no opportunity was afforded the profession, of ascertaining, by dissection, the nature and extent of his incisions. I think, however, from the accounts which are handed down to us of his method, by those who saw him operate, that he was guided by exactly similar principles with those, which we have endeavoured to inculcate. Sabatier, in his "*Médecine Opératoire*," thus speaks of his cutting into the bladder: "Il incisait sur la sonde et pénétrait jusque dans la vessie. Alors il donnait la sonde à tenir, prenait le lithotome de la main gauche, et glissait à sa faveur un conducteur mâle. Le lithotome ôté, ce conducteur servait à en introduire un femelle, et il achevoit l'opération comme il a été dit en parlant du grand appareil." Here, we have an operation recommended, the principles of which, coincide exactly with the one I have advised; an operation which, although executed on fifteen hundred patients, was never followed by a single death. How very different is the success of the most celebrated lithotomist of the present day, to that which attended Rau's operation? From the records of the Norfolk and Norwich Hospitals, we learn, that the number of deaths, for the last seventy years, have averaged four in twenty-nine. Rau had not one in fifteen hundred!! It is not fair to get over the difficulty by explaining the cause of the difference of success, upon the principle, that the cold phlegmatic constitutions of the Dutch are more favourable for the operation than the warm sanguineous English. But it is consistent with the principles of sound logic, and pure philosophy, to elucidate it, by showing, that in Rau's operation, a division of the base of the prostate gland could never happen, and consequently, that *urinal infiltration was, in all his cases, rendered physically impossible.*

A

LETTER

TO

A PROFESSOR OF MEDICINE,

At Edinburgh.

A LETTER
TO
A PROFESSOR OF MEDICINE,
IN THE
University of Edinburgh,
RESPECTING
THE NATURE AND PROPERTIES
OF THE
MINERAL WATERS OF CHELTENHAM.

BY ADAM NEALE, M.D.

Graduate of the University of Edinburgh; Licentiate of the Royal College of Physicians of London; formerly Physician to the British Army in the Peninsula, and to the Embassy at Constantinople; and one of the Physicians of his late Royal Highness the Duke of Kent, &c. &c. &c.

"Si liberis forte locutus sum adversus impostores, qui artis nostrae
utilitati et dignitati imponunt: detur quaso haec licentia philosophicae liber-
tatis et animae veritatis studioso."

"Il y a des occasions où l'on ne peut pas se taire, ou il seroit même
criminel de garder le silence. Celle-ci est une, d'autant plus que la vérité
de notre profession est la chose du monde la plus essentielle. Il y va de
la vie des hommes, cette seule réflexion nous engage à déclamer contre ceux
qui travaillent plutôt à la détruire qu'à la conserver." G. Patin, M.D.

London:

PRINTED BY J. SWAN, 75, FLEET STREET;

And Sold by Sherwood Neely, and Jones, Paternoster Row; Archibald Constable and
Co. Edinburgh; Carson and Sprent, Exeter; R. Nichols and Co. Wakefield; J. and
A. Duncan, Glasgow; Eaton, Worcester; and Gilbert and Hodges, Dublin.

To those who resort to a watering place merely for the sake of amusement or fashion, or who, in the language of our poets, Burns, are in the habit of bowsing "drumly German water," to make themselves look fair and fatter," it must be a matter of little consequence to be informed that the fluid whereof they partake is stimulating or sedative, beneficial or injurious, factitious or natural. But to the real invalid, to the man who returns with a shattered constitution, from a long residence in a foreign and unhealthy climate, to spend the evening of life amongst friends and relatives, for whose sake, perhaps, he is anxious to prolong the close of even a feverish existence, to such a man I hold it to be of some little moment, that he should be warned against a blind confidence in an equivocal remedy, because he believes it to be a natural one.

The late Sir Walter Farquhar, Bart. who like all old and experienced physicians, became, in his latter days, very sceptical as to the benefit to be derived from the more violent class of medicines, in the cure of chronic ailments attending the decline of life, was anxious to impress on the minds of

his young friends a distaste to tampering too much with such cases. And often have I heard him declare, that, to his certain knowledge, many a valuable life has been abridged by over drugging and over drenching; whereas, if the patient had but borne his ailments with patience, and his physician given a little more fair play to the powers of nature, all might have gone on well for several years. This amiable and accomplished physician died himself but lately, in his 83d year, a striking example of the truths of his own doctrine.

Reflecting on this subject, and applying myself to consider the effects of purgative mineral waters in certain cases, I have thought it might be useful to the public to call their attention to a point, whereon much of the safety or danger attending their use may occasionally hinge: being satisfied myself that those waters which contain an excessive quantity of sea salt cannot be used with advantage, I would say hardly with safety, by a particular class of debilitated invalids. The presence or absence of iron has seemed to be hitherto the criterion upon which medical men have fixed their reasoning, as to judging of the stimulating powers of mineral waters; but I am now well assured that they have been in error; and that, as in the mineral waters of Cheltenham, for instance, the giving of six-tenths of a grain of iron daily, or even more, cannot be half so important as the taking, or not taking, one drachm or more of common sea salt, on a fasting

stomach, in a pint of water for weeks together. In cases of incipient scirrhus, it has been well proved and established that iron is beneficial; whereas the application of sea salt, to the irritable villous coats of the stomach and small intestines, will, we know, aggravate the complaint. For this reason, I have judged it of some importance to call the attention of my Medical Brethren to the comparative analysis of the two principal spa waters of Cheltenham; and I will add, that if the object is to pour brine into the circulation, let us rather send our patients to the sea shore, than to an inland mineral water:—but if the intention be to stimulate the peristaltic motion of the intestines, let that particular water be advised which contains the greatest proportion of alkaline sulphates, and the smallest of muriate of soda; and for that reason rather let our patients drink the original spa water of Cheltenham than that of Harrogate, because the first contains the smallest quantity, and the latter the largest quantity of sea salt, known to exist in any mineral water in this island.

Another point, to which I would call public notice, is the custom which has crept in of late, of transferring mineral waters to cisterns, instead of drawing them fresh from the wells, and delivering them in their natural state. Surely, if we expect any benefit to be derived from the gases which they contain, we must relinquish all hopes of retaining them,

after having been so treated; and I, for one, beg to enter this my public protest against racking off mineral waters into cisterns, to suit the sole convenience of their proprietors. If, however, the impregnation, or non-impregnation, of gases be a matter of indifference, then be it understood that we ought not to advise our patients to undertake long and expensive journeys to mineral springs, since we can furnish them with dilute solutions of neutral salts, as Sancho Panza has it, "dry shod, and in our own country."

One word more. In looking into Brande's Chemistry, in the table of the analyses of mineral waters, I observe that he has admitted only three of the mineral waters of Cheltenham, namely, the Sulphur Spring, the pure Saline, and the Chalybeate; and, as he omits all notice of the others, I should be glad to know if the public are to conclude, that *he* disbelieves in the existence of the other three. Certain it is also, that he takes no notice of that spring which was analyzed by Dr. Fothergill, which is, in my mind, of more value and moment than all the rest; and I should be glad to know *why* he has passed that in total silence. I shall just add, that I have the authority of one of the proprietors here to assure my readers, that the soil around Cheltenham only produces *three* mineral waters.

TO

DR. * * * * *

M.D. F.R.S. &c. &c.

Edinburgh.

MY DEAR SIR,

IN your last letter you inform me, that several of your friends and patients, who have returned from visiting this place, have been rather dissatisfied with the result of their journey, and that some have even expressed their doubts as to the genuine quality of the water served out to them at some of the

wells. In consequence, it is my wish to furnish you, and some other of my friends who reside at a distance, with such a comparative view of the nature of these springs, as may enable you to elucidate to your patients, before they leave home, the cause of some failures and disappointments, and thereby direct them, so that they shall not be misled on their arrival here, to the injury of their health.

The brilliant reputation which these waters possess has arisen chiefly from this circumstance, that the visitors of former times were invariably supplied with water taken from what is now called the old well, or the original spa. For until within a few years there was no other. However, the spirit of commercial aggrandizement having prompted

an opulent individual to make a large purchase of land in the vicinity, and to bore the ground repeatedly in search of mineral waters, he at length succeeded in discovering some weak brine springs; and having built a new pump room, and laid out walks and plantations, and had these waters analyzed by two respectable chemists: some ailing friends, fond of novelty, then exalted their good qualities, and thus succeeded in a great degree in bringing them into vogue—while the old well having been leased out, and placed under the management of a female, who did not understand the arts of competition and *manœuvring*,—Fashion! (which perhaps you know, guides every thing at a watering place,) carried away the tide of visitors to the new pump room, and the new springs!!

This speculation thus having succeeded in producing lucre to its projector, in a degree far beyond what could have been imagined, other individuals, prompted by similar motives, have attempted since the same sort of schemes; so that now this place possesses no fewer than *three* saline aperient, and *three* chalybeate *spas*. The waters of some of these, however, seem to me to be so essentially different, and inferior both in qualities and power, that such of the visitors as follow more the caprices of fashion than the dictates of reason, and repair to these new wells instead of the old one, after some weeks residence here, and ringing out all the changes upon them, (for by the way I should tell you, that they have been numbered, one, two three,

four, five, and six, as if they were a set of musical bells to jingle in the ears of the public rather than cure their diseases;) many of these visitors, I repeat, have, to my own knowledge, returned to their homes in distant counties, with their health but little improved, and their faith most miserably shaken as to the virtues and efficacy of the Cheltenham waters. Yet, upon making accurate enquiries, I have frequently found, that most of those disappointed invalids had drank of every water but the real one, and that very few had ever repaired to the original fountain. So that, like some of the unfortunate heroes of the *Iliad*, recorded by the poet, they had indeed seen the plains of Troy, but had never tasted of the waters of the Xanthus.

But to return to our subject and make this fact more apparent, I shall now briefly lay before you a comparative view of the analysis of the principal waters, as ascertained by Drs. Fothergill and Jameson, and Messrs. Brande and Parke. For I am not vain enough to think that my own chemical knowledge could produce more accurate results. Nay, even if I distrusted the facts already published, I should prefer using them on this occasion, to referring to my own notes, for several obvious reasons.

The original spa contains, then, in one pint of water, sixty-nine and three-tenth grains of salts or solid contents, while No. 1 of the Montpelier spa contains seventy-four grains.

But we will place them in parallel columns, for the sake of more accurate comparison.

<i>Original Spa Water,</i>		<i>Montpelier Spa,</i>	
One Pint.		No. 1. One Pint.	
	Grains.		Grains.
Sulphate of Soda....	60,0	Sulph. of Soda 22,7	28,7
Sulphate of Mag- nesia		Sulph. of Mag- nesia 6,0	
Iron	6	Soda and Iron Car- bonates	1,5
Muriate of Soda ...	6	Muriate of Soda ...	41,3
Sulphate of Lime ...	5,0	Sulphate of Lime ...	2,5
Carbon. and Muri- ate of Magnesia...	3,1		
	69,3		74,0
GASEOUS CONTENTS.		GASEOUS CONTENTS.	
	Cubic Inches.		Cubic Inches.
Carbonic Acid	3,7	Carbonic Acid	2,5
Sulphuretted Hy- drogen	1,8		
	5,5		

From the above tables, then, you will observe, that the Montpelier spring differs most materially from the original well. The quantity of aperient salts, or alkaline sulphates, which it holds being not one half of what is kept in solution by the old spa, while the proportion of muriate of soda, or common sea salt, is *forty times greater!* But the muriate of soda does not act on the bowels. To produce the same effect, therefore, it is necessary to take at least double the quantity of the water of the Montpelier spring; while in doing so the drinker must, of necessity, at the same time, swallow *eighty times as much common salt!!* Therefore the stimulating or heating quality of these two springs may be stated as nearly eighty to one; while it should not be forgotten that the stomach must be

twice as much distended, before the aperient effect can be produced by the new spa water.

There being, then, such a glaring difference between these two waters, it must doubtless appear very astonishing to you, that none of the medical men, residing here for years, should have publicly noticed and commented upon the fact. However, if you will reflect for a moment, you will be aware that, in our profession, those at the head of it have generally but little time, and far less taste, for controversial statements, so that, either from want of taste, or of courage, or from self-interest alone, such ungrateful tasks are generally left to any casual labourer in the vineyard, who, like myself, may choose to take them up from a pure love of truth.

This being premised, I will now add, for your information, the analysis of the other Montpelier springs, from which you will perceive that they all, with one exception, No. 5, contain a redundancy of sea salt.

No. 2, or Strong Sulphuretted Saline.

	Grains.
Muriate of Soda	35,0
Sulphate of Soda	23,0
Sulphate of Magnesia	5,0
Sulphate of Lime	1,2
Oxyd of Iron	3
	<hr/> 6,45

GASEOUS CONTENTS.

	Cubic Inches.
Sulphuretted Hydrogen	2,5
Carbonic Acid	1,5
	<hr/> 4,0

No. 3, or Weak Sulphuretted Saline.

	Grains.
Muriate of Soda	15,0
Sulphate of Soda	14,0
Sulphate of Magnesia	5,0
Sulphate of Lime	1,5
Oxyd of Iron	,5
	<hr/> 36,0

GASEOUS CONTENTS.

	Cubic Inches.
Sulphuretted Hydrogen	2,5
Carbonic Acid	1,5
	<hr/> 4,0

No. 4, Pure Saline.

	Grains.
Muriate of Soda	50,0
Sulphate of Soda	15,0
Sulphate of Magnesia	11,0
Sulphate of Lime	4,5
	<hr/> 80,5

Scarcely any traces of Iron.

No Gaseous contents.

*No. 5, Sulphuretted and Chalybeated Mag-
nesian Spring.*

	Grains.
Sulphate of Magnesia	36,5
Muriate of Magnesia	9,0
Muriate of Soda	9,5
Sulphate of Lime	3,5
Oxyd of Iron	3,5
Loss	1,0
	<hr/> 63,0

GASEOUS CONTENTS.

	Cubic Inches.
Sulphuretted Hydrogen	1,5
Carbonic Acid	4,0
	<hr/> 5,5

No. 6, Saline Chalybeate.

	Grains.
Muriate of Soda	22,0
Sulphate of Soda	10,0
Oxyd of Iron	1,5
Loss	,5
	<hr/> 34,0

The cases which are generally sent to Cheltenham are, as you well know, either people who have resided a long time in warm climates, and whose livers and chylopoetic viscera have been injured by the influence of fevers and tropical heats; or such as have never travelled out of Great Britain, but whose abdominal organs have suffered from excessive stimulation, from various causes. In neither of these two classes of patients, according to my experience, does a water, containing muriate of soda, in excess, produce beneficial effects. In both, there is a tendency in the blood vessels to be rapidly and greatly excited into inordinate action, and many a torpid liver, which might have remained for years in a quiescent state, comparatively harmless to its possessor, has been speedily thrown into violent inflammatory

action, succeeded by suppuration, and the patient been hurried into the grave sooner by some years than would have happened, had he not been put upon a course of these stimulating waters. If this is sometimes their effect, in cases of diseased liver, you can easily conceive that the consequences are frequently more rapidly fatal in those plethoric subjects, with large heads and short necks, who are, by nature and habit, prone to apoplectic attacks; and, as one instance, I may mention, that, only last year, I well remember a gentleman of this description, who had prescribed for himself four half-pint glasses of one of the Springs every morning, and who, during the hot weather, having taken his usual allowance, which did not pass off by the bowels, was so stimulated and oppressed by it, that he tumbled down in an apoplectic

fit, after breakfast, and expired. Another circumstance I would mention, is, that in their clumsy attempts to render some of these waters more aperient, the mixers of the waters appear to have no fixed rule, nor measure, in adding "*the saline solution*;" so that some of my patients, last autumn, complained to me that they never could discover the *same taste or effect, for any two days together*, in the water which was handed to them. But, again, I must observe, that this can hardly occur at the old well, because the quantity of aperient salts contained in these waters is, in general, quite adequate to produce the effect required on the bowels; I say in general, because extreme cases will certainly occur of very torpid bowels, where some aid will be found requisite, and I always recommend such patients to see the *solution of*

Glauber's salt measured out, and added to the tumbler in their own presence.

But still, you will naturally be prompted to enquire from which of these springs is it that most benefit is derived; or what is the water which is most employed, in a general way? To answer this query I ought to tell you, that, of every hundred persons who drink here, I find that ninety-five, at least, take the Pure Saline, or No. 4; because its operation on the bowels, as they will tell you, is most expeditious and certain. But seeing, from its analysis, that this water contains neither gas nor iron, shall we not be warranted in drawing this inference, that all these people might have been equally benefited by drinking a solution of Glauber and Epsom salts at home, provided-

they had confidence and patience enough to persevere steadily in such a course for a fortnight or three weeks, and rise every morning and walk for an hour or two before breakfast? Scotland, as well as Ireland, can boast of a variety of mineral waters, equally efficacious as those of Cheltenham, Leamington, and Gloucester, provided they were administered in the same manner. And I cannot see why those invalids, who might be so easily cured at Pitkaithly, Moffat, St. Bernard's Well, or even Strathpeffer, should be permitted, by their physicians, to abandon their homes and native country, in search of mineral waters, while they possess so many, equally good, so much nearer home. The only point in which you are deficient, is in the knowledge of "*a little management*;" and, in order to elucidate these mystic

words, I will here subjoin a correspondence which lately took place between myself and an old schoolfellow, who resides at — Farm, in — shire, on your side of the Tweed.

TO DR. ADAM NEALE.

MY DEAR SIR,

IT is now some years since we last met at Ciudad Rodrigo, after the battle of Salamanca, and it is only within these few days that I have learnt your present residence. Presuming on our old acquaintance, I hope you will favour me with your advice and assistance, in regard to a measure which is of great moment to me under my present circumstances.

A small landed property has lately fallen to me, by the death of a near relation, upon which I have retired to spend the remainder of my days in peace and repose. My health, as you may recollect, was very indifferent when we last met, so that I have been obliged to quit all the scenes of active life; and with the scanty half-pay of my commission, as Surgeon to the Forces, and the income of my farm, I am educating my family, which is now rather numerous. On my land are some mineral springs, which were formerly held in great repute throughout the adjoining counties, and were leased out, at the yearly sum of — pounds, to a worthy man who resided on the spot. However, to my great grief and mortification, it has lately been discovered that the spas have been losing their repute, and some of the neigh-

bouring gentry, who used to frequent them, have abandoned them, in order to repair to your English watering places; so that my old tenant has declined renewing his lease, unless I will consent to an abatement of half his rent. On enquiring more minutely into particulars, I have found that our water-drinkers hereabouts, who used to swallow down some five or six tumblers-full, very contentedly, before breakfast, and as many in the course of the forenoon, allege that, by *going south*, as our phrase is, they can meet with mineral waters so much more powerful, that two half-pint glasses suffice to produce the desired effect; whilst my luckless springs, although they abound with saline matter, and iron, sulphur, and gaseous fluids, are yet so dilute, that the patient must needs take at least two or three English pints for a dose.

While musing on this sorrowful prospect, of a deficiency in my ways and means, a ray of hope has entered into my mind, on hearing from an old friend, just returned from England to this neighbourhood, that the owners of your English spas have found out some happy means of *managing* their waters, whereby they can double or even triple their purgative effects; and that your English waters are not, in fact, one jot stronger, *by nature*, than those of our Scottish fountains. Now, my dear Sir, if such be really the case, and you can acquire for me this desirable information, pray impart it, and you will confer a lasting benefit on myself and family, and even on the race of Macd——e's yet unborn, &c. &c.

My answer to this was as follows:—

MY DEAR FRIEND,

I CANNOT rejoice that it is really in my power to answer your letter so speedily, and put you in possession of all that information which you desire, on a subject which, I am free to confess, I feel must be of vast importance for you to know; while, at the same time, I am patriot enough to think that, in giving it publicity, it may eventually tend to diminish the number of Scottish absentees, and detain in our poor country some thousands of pounds annually, which would otherwise find their way to this richer portion of the island. You have indeed been rightly informed, that our southern neighbours do possess a secret manner of adding to the strength of their mineral waters, and thereby reaping a rich harvest from the credulity of their visitors; and if you,

or your tenant, can but screw up your consciences to employ the same means, which, however, I cannot say I think to be very legitimate, you may certainly put in your claim to retain your old customers at the spas of Benbibere.

Know then, my good friend, that your first business must be to procure a few tons of Glauber and Epsom salts from the nearest manufactory, where they will cost you at the rate of about fourteen pounds sterling per ton; which accomplished, you must next endeavour to procure a constant supply of the pure element from some rapid torrent or deep well—be it mineral water or not—for that is of little moment; you must then fill a few quart bottles with your spa waters and salt them to your taste, as Mrs. Glasse would say, but of various strengths

remember; and having duly sealed them up, send them to the chemist of the greatest repute in your part of the world, to be analyzed. These bottles you had better number one, two, three, four, five and six, *ad libitum*; but, I should suppose, you need hardly extend it to the Pythagorean number, "*seven*," as *six* will be quite sufficient for all your hydraulic purposes. This done, and your analysis having been returned, duly signed, sealed, and delivered, you must next look out for some complaisant Editor of a Monthly Journal, Philosophical, Literary, or Medical, to insert these Analytical Essays, with some enticing preface; as, for instance, "We congratulate the public on the great discovery lately made on the lands of Mr. Macd——e, of a rich variety of Mineral Waters, whereby those who repair to the

"fountains of Benbibere, may henceforth be accommodated with all sorts of waters, saline, aperient, chalybeate, or sulphuric, according to their several fancies and necessities." A spacious pump room, of the form and dimensions of a Greek temple, must next be built; beneath the flooring of which you must excavate several tanks, which are to be filled every night, by means of leaden pipes, laid under ground all the way from your well or fountain head, where you brew the mineral waters. And, lastly, to prevent the prying curiosity of your visitors, you must not neglect to build a sort of pigeon house, or Martello tower, over your fountain head, large enough to contain a stout forcing pump, and a large trough for your Glauber and Epsom salts, a few barrels of which you can stow there for use upon all occasions. This

Martello tower you must place at some distance in the rear, and let a lawn, or hedge, or paling, intervene; clap a cannon on the top of it, to repel invaders; or, if you are afraid of using powder and shot against the king's sieges, thatch it well at top, to conceal its importance, and stick upon it a board, painted to this effect, "Take notice, that this is *no thoroughfare*, but a private road only, to *Hoaxhall* farm; and whoever trespasses on this ground shall be prosecuted according to law."

All around your pump room you must lay out plantations and walks, with shady trees and flowering shrubs, and, having procured a band of pipers and fiddlers with bass drums, &c. to titillate the auditory nerves of your visitors, while your waters are stirring up their great and

small intestines, you may throw open the doors of your pump room to all hypochondriacs and true believers, who will assuredly flock by hundreds, and tens of hundreds, to the new spas of Benbibere, to seek the Goddess of Health, a statue of whom, for the sake of classical allusion, you had better place over your pump room, with a Latin motto beneath, from one of the old poets, as for instance,—"*Utilis atque fluit, utilisque crumenæ*;" or, in plain English, I hope this will be as good for your bowels, as it will be to my purse. I must not omit to mention that the waters, as required, must be forced up from the tanks beneath by a forcing pump, to pour it into small troughs some feet above the flooring, from whence it must descend in syphons, terminating in crystal stop cocks. This will make it hiss and sparkle in the cup, to

the admiration of the drinkers, so as to deceive them with the appearance of strong gaseous impregnation, just as a knowing waiter plays off his stalest table-beer, by pouring it from a flaggon elevated over his head. One thing more you must not forget, which is, to have some of your water heated in coppers behind the pump room, to mix up and take off the chill from the cold waters for the sake of your more delicate female visitants.

When you have succeeded in bringing the spas of Benbibere into full fashion, you may then build a manufactory for the preparation of salts from your own springs. For this purpose, you must lay in a proper store of Glauber and Epsom salts, together with a quantity of Sal Polychrest, (the salt of many virtues,

of the old chemists,) the sulphate of potash of the moderns; not, indeed, that this was ever yet found in a mineral water since the days of the deluge, but it has this good and notable quality, that it communicates a solidity and most singular form of crystallization to your salts, which cannot be attained by any other mode; and which serves to puzzle all the apothecaries and chemists, at home and abroad, who will never dream of finding *vegetable* alkali in the salts of a *mineral* water. And, besides, you may then persuade the world that the salts from your wells are of so marvellous a nature, that you are warranted in charging them at about twelve times their real value; and thus you will obtain eight or ten shillings per pound for *that* salt which any of the manufacturing chemists of Wolverhampton will be glad to furnish to you, wholesale, at the rate of sixpence or

eightpence. To be brief: the best proportions for your new salt you will find to be, one part of sulphate of potash, six parts of Glauber's salt, and two of Epsom salt, with half a part of sea salt, which last will render it *more palatable*. This compound salt you may dry, and grind, and twist up in all sorts of forms, and baptize it the real Benbibere effloresced, magnesian, chalybeate, alkaline salt. Put it up in strong glass bottles, labelled with directions for use; and be careful not to omit pasting regular stamps over the stoppers, lest the Excise-office should pounce upon you.

Pursuing these plans, my dear Macd——e, for a few years, you cannot fail to realize a magnificent fortune; and if you can but carry on the farce with due perseverance, and avoid shewing all symptoms of fear, whenever you may

hear of the sudden deaths of any of your new customers, and not neglect, moreover, to breed up one or two of your sons to be writers to the signet, or attorneys, as we call them here, to threaten with legal actions all those who may venture to write against the *orthodoxy* of your waters, you may, I think, live long enough to buy up the estates of half the spendthrift young lairds of your county. The greatest danger, and indeed almost the only risk that I can anticipate to your plans, is, lest, peradventure, in after years, some saturnine physician of the Scotch school, should set himself down, like a plain matter-of-fact man, to practise his profession honestly in your village, when, if he should discover the cunning game you have been so long playing off on the public, and of which he also has been the dupe, then

"the Lord have mercy upon you;" for I should think it very likely it will fare with you, as it did with an impudent fellow in Spain, who employed an ecclesiastic to perform the funeral service of the Catholic church over the carcase of a dead donkey, by telling him he was interring a rich old miller; for the priest, having discovered the imposition, from the impulse of honest indignation, had the hoaxer consigned to the dungeons of the Inquisition, where he soon after died, from being forced to banquet on his own water—a mode of punishment, as you may have heard in Spain, not unknown to that humane body, and which, indeed, was threatened against the rebellious Jews in the Old Testament.—Farewell.

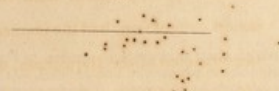
THE END.

J. Swan, Printer, 75, Fleet Street, London.

SKETCH OF A PLAN

FOR

MEMOIRS ON MEDICAL TOPOGRAPHY.



(From the Edinburgh Medical and Surgical Journal, No. 66.)

Printed by George Ramsay and Company.

SKETCH OF A PLAN

OF MEDICAL TOPOGRAPHY.

THE object of this sketch is to present a plan upon which it appears to us that the medical topography of a town, a district, or a country, may be advantageously drawn up. That in preparing this outline, we have either exhausted the subjects of inquiry, or even that we have indicated them all, we are very far from supposing; but we trust it will be found that few points have been entirely omitted which are essential to the medical topographer; and we are convinced that, taking the present hints as the basis of his inquiries, he may render important services to science in general, while he materially assists himself in attaining a knowledge of external circumstances which exert considerable influence upon the health of those among whom he may exercise his profession.*

* We take this opportunity of noticing an omission in the article on the "Medical Topography of Canada," which has called forth the present sketch; we allude to a paper by Mr. Royston, in the Medical and Physical Journal, Vol. XXI. which should have held a prominent place in our enumeration of British authors.

SKETCH, &c.

WE now proceed to redeem the promise made in the last number of this Journal, and offer to the consideration of our readers a plan upon which it appears to us that the medical topography of a town, a district, or a country, may be advantageously drawn up. That in preparing this outline, we have either exhausted the subjects of inquiry, or even that we have indicated them all, we are very far from supposing; but we trust it will be found that few points have been entirely omitted which are essential to the medical topographer; and we are convinced that, taking the present hints as the basis of his inquiries, he may render important services to science in general, while he materially assists himself in attaining a knowledge of external circumstances which exert considerable influence upon the health of those among whom he may exercise his profession.*

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We shall divide our objects of inquiry into four general heads, and these, again, we shall subdivide into specific subjects. Under the first head we shall include the Physical Geography of the place to be described, comprising notices on its botany, mineralogy, and natural history. The second head will refer to the Inhabitants, including an account of their food, habitations, customs, &c. Under the third head will be classed such subjects of inquiry as are connected with Diseases whether endemic, epidemic, or sporadic; which appear under the form of epizootics among the lower animals; or which affect the products of vegetation. To the fourth head will be referred miscellaneous objects of inquiry, or such as could not be so well arranged under any of the preceding. Many of the subjects are so closely connected that they fall under more than one head, and they will be treated most in detail in that division of the subject under which they seem most naturally to range themselves.

I. The Name—the Latitude, Longitude, and Boundaries.—These heads require little or no comment. If the place to be described is extensive, it will be necessary to note whether the situation is insular, or a part of a continent. If it is only a small district or town, it will be necessary to state what distance it may be from the sea, and what elevation above it; what distance it may be from the metropolis, and the modes of communicating with it.

The Seas—the Rivers—the Lakes—the Wells—the Morasses—the Bogs, and the Canals.—These are points upon which the topographer should bestow considerable attention, as they so materially affect the dryness or moisture of a country. The nature of the deposits, animal, vegetable, or mineral, which are left by the waters, should be accurately ascertained; as on them, especially in warm countries, the most important consequences depend. The height to which the tide may rise in a river, as well as the rapidity or sluggishness of the stream, will materially affect these depositions, while the physical features of its banks, and the tortuosity of its meanders, will possess considerable influence by concealing or exposing them to the sun and the winds; hence also the depth of the waters, the soil through which they flow, or in which they stagnate; the height of the banks, the materials of which they are composed, the shelter which they afford, the nature of that shelter, whether of sedge, underwood, full grown timber, or rock, should all be pointed out, and the accidental or periodical accumulations of filth or alluvial materials which pollute or enrich the stream.

should be described. The inhabitants of the waters, as well as their vegetable products, become incidentally an object of investigation, as they may conduce to the nourishment or the destruction of man; and, as many of them fix their "habitat" in waters peculiar for their rapidity, their clearness, or their slime, their presence may often distinctly mark the existence of such peculiarities. The surface for evaporation presented by the canals, the rivers, and other masses of water; the aid which they may contribute to the drainage of a country; the facilities which they may afford to agriculture and commerce; and the fitness of their waters for culinary purposes, are all objects of investigation. The state of the subterraneous moisture should be inquired into; and this is frequently demonstrated in low marshy countries, as Zealand, by the state of the wells, which are fed by the subterraneous water with which they are on a level. Indeed, the comparative healthiness of the villages in the Netherlands is easily ascertainable by the inspection of their wells, the waters in which sink in proportion to the droughts of summer, and afford a proof of the constant exhalation of concealed moisture.* The nature and effects of those exhalations which arise from low muddy beaches should be specially inquired into, and no opportunity should be lost of ascertaining a point which seems not yet to be perfectly agreed on, viz. how far the admixture of fresh water may accelerate or retard the corruption of the animal and vegetable materials deposited upon them.†

The Mountains.—Their height, extent, and general direction; the snows with which they may be covered periodically or throughout the year; the rivers or streams which may arise in them; the forest timber, plants, and minerals with which they may abound; the passes through them, and the influence they may exert over the currents of the winds; the interjacent valleys, and the state of their temperature, compared with that of the surrounding elevations, should all be noted.‡

The Climate.—A complete system of meteorology is not only unnecessary for the purposes of medical topography, but is of such difficult execution that the life of man seems inadequate to effect it; it is absolutely necessary, however, that some of the leading facts connected with the physical characters and

* Pringle, Diseases of the Army, Chap. 1. Part I.

† Vide Lancisi De Nox. palud. effluv. Lib. I. P. I. Cap. 5.

‡ In general for every 200 feet of elevation one degree of decreased temperature may be expected. The effects of the funnel-shaped chasms in the Ghauts of India, in tempering the heats of that country, are most remarkable.

medical effects of the climate should be given. The steadiness or mutability of a climate is a physical property which seems more to influence the health of man than either its heat or its cold, abstractedly considered; and a knowledge of this can only be acquired by long and correct personal observation, or by averages drawn from the observations of several preceding years. Dr Chisholm has given us a very good idea of the climate of Bristol and Clifton by an average table of the number of wet and dry days for a period of fourteen years together, with an account of the prevalent winds upon the same principle. Dr Clarke also has given us some good views of the temperature of Nottingham.* In whatever mode the topographer may choose to proceed, he should give accurate accounts of the highest, lowest, and medium states of the thermometer, barometer, and hygrometer, for two or three years at least, together with an account of the prevalent winds, and the occasional fogs, meteors, hurricanes, &c. It must be observed, however, that nothing can be more jejune and uninteresting than a protracted enumeration of the daily variations of the atmospheric temperature, weight, and moisture, or of the different shiftings of the winds, if the person who describes such occurrences does not deduce from them some practical information, by marking the effects which they produce upon the health of man and upon the face of nature. Hence it is that many of those volumes which have cost their authors the minute labour of years to compose, lie so often unconsulted amid the lumber of the library; but if to the changes of the state of the atmosphere is added an account of the manifest influence which they have exerted on the health of those who were previously well, or on the diseases of the sick and convalescent,—then an otherwise trivial piece of information is converted into an interesting and an instructive fact. In like manner, if any particular state of the weather has a marked effect upon vegetation, it may consecutively produce a very powerful influence upon the health of the inhabitants of the district where it has prevailed. Upon the whole, while the medical topographer should by no means neglect minute and regular observations upon the changes of the weather, he should consider them not as a primary object of research, but should view them as merely subservient to the great purpose of explaining the origin and progress of disease; and it is by comparing the cause and the effect together, and repeating the comparisons faithfully and frequently, that regi-

* Ed. Med. and Surg. Journ. Vols. V. VI. and XIII.

sters of the weather can ever be made available to useful purposes; or, as it has been happily expressed by a contemporary journalist, can “illuminate that darkness of conjecture, reconcile that contrariety of assertion, and reduce to a rational system that facility of belief which has so long existed upon atmospheric influences.” These comparisons should be fully stated in detail, for few readers will stop in the course of their perusal to refer to an appended weather table, and wade through the slow, dull, and dubious process of comparing degrees of the thermometer and the anemoscope, with the variations of health. These records lose their utility and their interest by separation, and it is in vain to deny, that the most faithful recital of facts will often fail to make any impression, if they entail on the reader extraordinary and monotonous labour.

There are such a multiplicity of forms for registers of the weather, that the topographer can be at little loss in selecting a model, or in procuring from the observatories of large towns correct and satisfactory details; but it would be extremely desirable that the degrees of the thermometer in the sun, to which the labouring classes are so much exposed, should be occasionally stated; and it should also be kept in view, that, if the observations are made uniformly at the same hour of the day throughout the year, the atmosphere will have felt the influences of that planet for a much longer period at some seasons than at others, previous to registering the height of the mercury. In detailing the state of the winds, it will be of essential importance to describe what tracts of land or water they blow over, and how far these may influence the deposition or absorption of heat and moisture, may alter the direction and force of their currents, or may affect the exhalations which they import or carry off; extensive tracts of forest will greatly modify the effects of the wind, and even a comparatively small number of trees will act as a check on healthful ventilation, or will intercept the baneful miasmata of marshes. The ordinary effects of the atmosphere on inanimate substances should be noticed; in some districts all polished metal speedily rusts, and the existence of saline particles in the air is inferred in others, by the remarkable fading of those dyed stuffs which require acids to fix or heighten their colours.* Some peculiar states of the atmosphere have been observed to precede certain epidemic affections; thus, Dr Rush states, that substances painted with white lead, and exposed to the air, have suddenly assumed a dark

* Chalmers's Diseases of South Carolina, Vol. I. p. 11.

colour, and that a smokiness or mist in the atmosphere has generally preceded a sickly autumn in some of the American states.* Although we are ignorant of the causes, we know that the long prevalence of certain winds frequently predispose the living body to disease; the effects of various winds are also remarkably displayed in the phenomena observable on trees and buildings. In the American forests, the bark on the north side of a tree uniformly thickens, and the northern side of a brick building is said to be much more difficult to pull down than that of any other aspect. In our own country, buildings of certain species of stone ooze forth moisture, or effloresce in those points where they are exposed to particular currents of wind. In all times, certain winds have been observed to produce deleterious effects on wounds and ulcers; these effects have proceeded from the south winds in some countries, from the east in others; at Gibraltar, such was the deleterious effect of the latter wind upon the wounded after the battle of Algiers, that the Leander left that station without waiting for her supplies,—a privation which was amply compensated, by the improved state of the invalids, so soon as they were removed.† In our own country, certain seasons are more productive of buboes than others, and under certain states of the atmosphere, not yet clearly understood, both these and all other venereal sores take on simultaneously a malignant character. The effects which the climate produces, or is supposed to produce, in the alleviation of certain diseases, as phthisis, syphilis, hooping-cough, &c. should be distinctly and fully described, while, at the same time, those complaints in which it proves manifestly injurious, or where it retards convalescence, should likewise be mentioned. These points will also come to be more fully considered under the head of Diseases.

The Soil.—It will be of great importance to describe the general nature of the soil, and its elevation above the adjacent seas or other waters, and to particularize those properties by which it may favour the retention or the transmission of water, either at the surface or at a distance from it. With this in view, it will be necessary to state the proportions of pasture, arable and wood land, and whether the soil is alluvial, rocky, gravelly, clayey, sandy, &c. while the stratification or intermixture of all these materials, as far as they have been ascertained, should be mentioned. The periods of the year at which noxious ex-

halations arise from the soil in greatest abundance, will become an important subject of inquiry; at the same time, it will be necessary to investigate the extent to which evaporation may have proceeded when these exhalations become most deleterious. That they most abound when the waters are nearly or quite expended, has been observed by able physicians, and they have also endeavoured to account for it, by supposing, that the sun's rays then penetrating the dry soil, exalt vapour which had been long pent up, and may be supposed to have contracted vicious qualities, or become concentrated from having remained undisturbed by the wind. Whatever may be the cause, it is certain, that, in many countries, the malaria does not arise until all the surface water has totally disappeared, and leaves the whole face of the country, including the very courses of the winter streams, an arid desert.*

The Vegetable, Animal, and Mineral Products of a country have a powerful influence over the health of the inhabitants, and should be examined under the various points of view in which they may contribute to their food, their clothing, their warmth, and their domestic comforts; or as they may promote or retard these in a secondary way, by influencing population and manufactures, favouring the influx of new inhabitants, introducing new modes of living, or becoming subservient to the operations of commerce. In countries which abound in certain vegetable products, the effects of moisture and putrefaction are often found seriously to affect the health; of this the culture of rice and various other plants are striking examples. The rearing of certain animals, as the silk worm of Lombardy, and the Merino flocks of Spain, considerably affect the face of the country, and give a new character to the natives. The periodical visits of certain birds, fishes, and even insects, prove most seasonable articles of supply in some instances, or are destructive to comfort and life in others. The presence of extensive mines is marked with peculiar features by the hand of nature. Among the more prominent instances of this may be mentioned the gold and silver districts of Peru, the quicksilver mines of Almaden, and those of lead and tin in our own country, where external poverty and desolation reign; while the presence of coal, wherever it is wrought, is the sure forerunner of a crowded and manufacturing population. The early appearance of many plants, and the slowness or rapidity of their

* Rush's Works, Philadelphia, 2d Edition. Vol. IV. p. 174.

† Quarrier, in Med. Chir. Trans. Vol. VIII. p. 7.

* See Chalmers's Diseases of South Carolina, Vol. I. p. 6. Fergusson, Med. Chir. Trans. Vol. VIII. p. 152.

vegetation, the torpidity, arrival and departure of many quadrupeds, birds, and insects, will often mark more strongly than the indications of the glass, the nature of a climate; and the judicious naturalist will avail himself of the circumstances in his topographical description. Strong indications of the healthfulness of a country may be drawn from its plants and animals, and the approach of unhealthy seasons has often been marked by the changes produced on them. In America the common house fly has disappeared, while mosquitoes have been multiplied, and several new insects have been observed previous to some of their malignant epidemics; and, at similar periods, certain trees have emitted unusual smells, the leaves of others have fallen prematurely, and the fruits have been of inferior size and quality; while, in some places, an unusual growth of vegetable productions (fungi) have preceded the most destructive scourges of mankind.

To give a complete medical topography, all the products of the district, whether poisonous, edible, medicinal, or employed in the arts, should at least be enumerated, and should be particularly investigated as far as they may immediately affect the health of man. Among the various products, those which are applicable to medical purposes should be specially described, and this, whether they enter the established pharmacopœia, or are employed as succedanea by the regular practitioners, or as specifics by the inhabitants or by empirics. The most approved modes of preserving and preparing them should be fully detailed, together with their doses and sensible effects. In this enumeration, the mineral waters will claim peculiar attention; the complete analysis of these should be given, or at least such experiments should be made upon them as may serve to point out the most prominent articles with which they are impregnated, at the same time should be mentioned the articles with which they are adulterated, improved, or imitated at the spring, or at more distant places. The temperature of thermal waters will of course be mentioned, together with the effect which their external application produces, or is supposed to produce, upon those who have recourse to their aid. Saline springs not used for medicinal purposes, or mines of rock salt, alum, &c. whether wrought or unwrought, will be well deserving of notice.

The State of Agriculture.—This has a manifest and powerful influence on the health of the inhabitants of a country, and should therefore be fully considered, and not only are the immediate effects of cultivation of importance to be known, but it will be also necessary to inquire into the effects of such after processes as are ascertained or suspected to be unhealthful,

especially where the putrefaction of the substances treated is a necessary part of them, as the preparation of flax, &c.

The State of the Roads and Communications.—The facilities of communication are of such essential importance to the comfort and health of the inhabitants of a country as to deserve being distinctly noticed.

A map of the places described will greatly enhance the value of a topographical description; nothing more will be necessary except a simple outline of the boundaries, of the direction of the mountains and rivers, and of the situation and extent of the forests, lakes, morasses, bogs, &c. A sketch of the stratification of the soil would also be a valuable addition to the view of its surface.

II.—*The Population.*—The aggregation of large masses of human beings produces effects so important upon their health as to become a special object of inquiry to the topographer; he should, therefore, endeavour to obtain the most correct statements within his power. If, in a country parish or district, he should compare the numbers of inhabitants with the space over which they are spread; and if in a town or city, he should ascertain the bounds within which they are pent up, and how far the evils of confinement are aggravated or relieved by various external circumstances, of which the following are the most important.

The Dwellings.—In describing the dwellings the medical topographer should notice the exposure, the soil on which they are founded, their elevation above it, the materials of which they are built, the mode in which they are finished, especially as concerns their dryness, their warmth, and their ventilation, and the facilities afforded to the inhabitants for preventing or removing accumulations of filth. Under this view will come to be examined the nature and extent of the cess-pools and sewers proceeding from the houses to the common receptacles of filth, and, above all, the conveniences for the reception of human ordure. It is a fact well worthy of attention, that the inhabitants of those buildings which are run up in a slight manner at the back of a row, and exposed to the effluvia of privies, have been found most susceptible of the contagion of typhus fever.* The average number of inhabitants in each dwelling, the cubical contents of their rooms, and the number and direction of the means of ventilation, should be ascertained with a view to show how far they may enjoy the advantages of a free

* Ferriar, Medical Histories and Refections.

circulation of pure air. Much sophistry and much special pleading have been employed to invalidate the opinions of those who hold that the effluvia arising from the human body in close and crowded situations are productive of contagious diseases; but the facts collected upon this point appear to be incontrovertible.

The mode in which the streets are laid out, their width or compactness, their pavement, their drainage,* their exposure to the sun and to the wind, are considerations of much importance. The difference of a few paces may make a very considerable difference in the health of the inhabitants; thus at Rome some streets, say certain points, sides, and even houses, of some streets are more damp, chilly, and exposed to the malaria, than others.† In many of our own towns certain streets or districts have been always remarkable for fever, and they have been as remarkably exempted from its attacks when the air has been allowed freely to percolate them by the removal of old walls or compact masses of houses, which prevented ventilation and the access of the solar influence. In our own city nothing but the violent gusts of wind, which occasionally perflate our densely built wynds and closes, could check the generation and progress of disease.

The Bedding, Clothing, and Furniture.—With the superfluities of the rich the medical topographer has little to do; but on the necessary supplies of these articles in possession of the poorer and more numerous part of the population, much of their comfort and health depends. A sufficiency of bedding and clothing to obviate cold and moisture is indispensable to health; and, during the prevalence of contagious diseases of the typhoid class, is of the utmost importance as a preventive. A very striking illustration of this will be found in the medical report of Dr Ainslie, Mr Smith, and Dr Christie, on the epidemic fever which lately ravaged an extensive district in India. Wherever the inhabitants were elevated above the surface by settles or bed-frames, and defended by rugs, there the disease was decidedly less frequent and less fatal in its consequences.

* Compact gutters, by preventing the sinking of the water into the earth, are reckoned by Dr Rush one cause of the unhealthiness of Philadelphia.

† See Clarke's Medical Notes. The wards of the Santo Spirito Hospital to the south and south-east are more insalubrious than others, and the lower apartments of some hospitals are affected with the malaria, while those immediately above escape its influence. A very slight obstacle, as a gauze curtain, is said to prevent the entrance of the malaria at Padua. In the West Indies, soldiers residing in the lower part of the barracks were found to be more liable to yellow fever than those in the upper, in the proportion of 2 to 1. See Ferguson in Med. Chir. Trans. Vol. VIII. p. 567.

Every article of furniture which can aid in the promotion of cleanliness, in the preservation and cooking of food, and in other purposes subservient to domestic economy and personal comfort, must essentially contribute to the preservation of health. The materials of the beds and furniture, the frequency of their renewal, and the modes adopted to preserve and purify them, are all worthy of attention.

The Fuel.—The nature of the fuel, and the facility of procuring it, is of the utmost consequence to all ranks of society, but especially to the poorer. It is scarcely possible to conceive how thousands of the pauper inhabitants of Ireland could protract their existence, did not the bogs amid which they pine, furnish them with the means of cooking their food, and obviating the effects of the chilling damps with which they are surrounded.

The Diet.—The quantity, the quality, and the regularity of our meals have such an obvious influence upon health, that the medical topographer should be minute in his inquiries upon these subjects. He should enumerate the species and the price of the different articles, the modes in which they are prepared or preserved, the adulterations which they undergo, and the condiments which are employed along with them. The nature of the beverages used should be investigated, and their effects when taken in moderation, or pushed to excess, should be described. The nature of the water used as an article of diet, or employed for culinary purposes, should be ascertained; and those impregnations which act directly on the kidneys, the bowels, or the skin, should be investigated, while the secondary effects which their hardness or softness may produce by their adaptation to the purposes of cookery and cleanliness should be pointed out. The abundance or scarcity of this vital article should be particularly specified. The sources from whence it flows, the materials through which it is conveyed, and in which it is preserved, the accidental pollutions which may fall into it in its course, and the facility with which it disemboagues itself after having served the various purposes of life, will be important subjects of consideration. The effects of the water on strangers should be mentioned; in a great number of situations no new comers can taste the water with impunity, and the same effects are produced on their cattle. The ordinary mode in which nature appears to remove these noxious effects is by the bowels; but it will be an interesting object of inquiry to ascertain what other outlets she may employ for that purpose. The use of snow water for drink in Alpine regions has long been supposed to give rise to goitrous tumours. This mode of ex-

plaining these unseemly appearances has been questioned by some upon the principle that the disease is frequent in Sumatra, where snow or ice are never seen, and unknown in Chili and Thibet, though the rivers of these countries are chiefly supplied from melted snow; but a sufficient proof that goitre proceeds in some cases from snow or ice water is, that navigators, who were not exposed to any other of the circumstances which affect the inhabitants of the Alpine regions, yet, after having been forced to drink ice or snow water, have become affected with the disease. (See Cook's Voyages.) It will be a most interesting and legitimate object of inquiry to ascertain how far cutaneous affections depend upon the peculiar sources from which the water in ordinary use has been procured. The good or bad effects produced, or supposed to be produced, in some districts by certain articles of food long continued, should be inquired into; the use of oil is stated in some countries to predispose to hernia; beer and cyder are supposed to be productive of calculous disorders, while salted meat is, on no slight grounds, presumed to prevent them.* In some countries the most innocent articles of food are deemed injurious, and in Greece, eggs, butter, and milk, have been stigmatized as three poisons†.

The Employments.—The nature of the employment or trades of the inhabitants, the periods occupied in them, whether in close, crowded, and damp apartments, or in the open air; the metallic or other vapours, or the currents of air or water to which the workmen are exposed, and other similar circumstances, should all be most minutely particularized. To these particulars should be added the nature of the diseases produced among the artificers, the means they adopt to prevent their occurrence, and the remedies peculiarly useful in their removal.

The Amusements and Customs.—As these mark the general habits, and often in particular instances lead to disease, they are well worthy of enumeration. The topographer should notice whether they are active or sedentary, whether exercised within doors or in the open air, whether they tend to the excitement of the

* In tropical climates, calculus is scarcely known. On the Continent, and in Britain generally, it occurs in the public hospitals in about 1 case in 500 or 400 patients. In the cyder counties of England it is much more frequent than in many others, but in the Norfolk district, it is as frequent as 1 in 38, a proportion exceeding any thing which has been noticed in any other district of Europe. In the British army, calculous complaints are exceedingly rare, but we do not know whether any comparative estimate has been made of their frequency; in the navy, however, they are so strikingly low as 1 in 17,300. See Hutchinson in *Medico-Chirurgical Transactions*, Vol. IX. p. 459.

† See Clarke's *Travels*, 8vo. Vol. III. p. 255.

depressing passions or not. Even the most trivial local amusements may produce the most powerful effects on the passions and the health; a fact which will not be denied by those who recollect the effects of music in exciting the Scotch Highlander, or in producing nostalgia, and even death, in the Swiss mountaineer.

The Morals—the Education—and Mode of Rearing Children.—The influence of religious instruction on the modes of living of individuals cannot escape the most unconcerned observer, and hence the general state of the morals of the district which he describes, should be an object of the medical topographer's investigation. In pursuing this he should not lose sight of the number of inhabitants which the exhortations and the example of fanatics have so constantly consigned to the mad-house and the foundling-hospital; while he will perhaps find that equal numbers have been reclaimed from the gin-shop,—another fruitful source of supply to one at least, if not to both, of these establishments. Under this head the effects of early marriages upon health seem most naturally to range themselves.

The Police. of a city or district has a considerable influence upon the health of its inhabitants at all times, but in periods of public calamity from contagious disease it becomes absolutely essential to it. The subject of medical police in general is one of such extent, and comprising such a multiplicity of objects of inquiry, as to form a distinct science of itself. We shall therefore content ourselves with enumerating a few only of the principal points which appear to us to bear more directly on the subject of medical topography, and which should be minutely inquired into by all who cultivate that study. The first of these is the establishment of common sewers, without which no town can ever be either a pleasant or a healthful residence; the erection of necessaries; the pavement, cleaning, and lighting of the streets; the regulation of the slaughter-houses and markets; the removing to convenient distances burial-grounds and all manufactories productive of noxious exhalations; the establishing a control over the admission and lodging of vagrants; the regulating the purchase and exposure of old clothes and furniture;

* The consequences of burying in churches are now well known; perhaps the best mode ever adopted is that in use at the branch of the Hospital of Incurables of Naples, near Torre del Greco. The burial ground is divided into 563 large and deep vaults, one of which is opened every day of the year, and after the bodies are deposited, is accurately shut. The process of putrefaction is completely finished before it is again opened. See Eustace's *Italy*, Vol. II. 8vo. p. 356.

the controlling the venders of spirituous liquors; the diminution, as much as possible, of the number of prostitutes, and the holding out to them, and the lower orders of society in general, encouragement to have recourse to hospitals on the first appearance of disease among them.

The State of the Poor.—Under this head should be enumerated their employments, the rate of wages, the price and nature of the food which they are able to procure for themselves, or which is supplied them, either as an equivalent for their labour or in the form of charitable donations; the rent of their cottages or rooms, the public institutions for their instruction and their support, and the friendly or other associations for their relief, &c. &c.

III.—As the ultimate aim of medical topography is to ascertain every circumstance that has an influence upon health, the nature, extent, and varieties of the diseases of the district which he undertakes to describe, are subjects of primary importance to the topographer. Under the present, as well as the other heads of inquiry, much must be left to the judgment, and much must depend upon the opportunities for observation, but the following objects appear to us indispensably necessary to be investigated.

The Endemic Diseases.—In the details on this head, the following points of inquiry should be particularly attended to. The age, sex, and constitution of those most commonly attacked; the nature of the diet, employments, or situation which renders them most liable to be affected; the popular opinions on the disease; the domestic prophylactics; the mode of cure followed by the regular practitioners in private life, and the result of hospital treatment deduced from the tables of admissions, discharges, and deaths.

The Epidemic and Sporadic Diseases.—The same subjects of inquiry should be attended to in these as in the preceding class, and the utmost caution should be observed in examining into the proofs of the contagious or non-contagious nature of the diseases of whatever species.

Hereditary or Family Diseases claim the attention of the topographer, and not only should their existence be ascertained, but any modes which may have been adopted to prevent or to cure them should be fully detailed.

The existence or frequency of *Feigned Diseases* should not be overlooked, and the details on this point should be ample, embracing the history of individuals, the particular diseases and symptoms which they have imitated, the real diseases which

they have brought on, and the modes adopted for their discovery. The history of the fasting woman of Titbury, and the steps which led to her detection, will long be remembered in the medical annals of this country. The diseases of the manufactories, the prisons, the poor-houses, and the boarding-schools, should not be forgotten, nor should those from *imitation*, which so often arise in the latter establishments, be overlooked. These diseases of imitation also often prevail in other situations, for instance the convulsive disease in Wales, Shetland, and elsewhere, and the disease known by the name of the "Louping Ague," in Angus-shire.*

Tables of Marriages, Births, Diseases and Mortality, if drawn from extensive and authentic collections of reports, become peculiarly valuable, and the greater number of points of comparison with preceding years which they furnish, the more is their value enhanced.

Epizooties.—The diseases of cattle and other animals should be inquired into, particularly when they have been very extensive and fatal. The most severe epidemics, the plague, for instance, which have afflicted man, have been preceded by similar affections of the lower orders of animated beings. The influenza, which raged in this country, and extended almost over the world in the latter end of the eighteenth century, was preceded in some places by a mortality among cats, and in others, birds were found to be peculiarly affected. The diseases of the cattle, which serve for agricultural purposes, or directly for the food of man, should be an object of particular inquiry. The health of this class of animals is peculiarly linked with that of the human species who tend and feed them, and who, in return, owe to them so much of their comfort and their support. In the epidemic which lately ravaged some of the Indian provinces, upwards of 44,000 head of cattle died in one district in the course of seven months, partly from want of food, and partly from disease. It is asserted that dysentery is produced among sheep closely pent up, and that the disease thus generated becomes contagious among these invaluable animals. The nature of the rot, to which they are subjected, is an inquiry of much importance, the more so, that in its early stages it is found that they take on fat, and are therefore in that morbid state often applied to the purposes of food. There can be no doubt that the flesh of animals who have died of disease, or who are killed when overheated by excessive labour, is highly injurious to health; and even the flesh of those who have died

* See a full account of these in our 3d Vol. p. 434.

a natural death has occasioned sickness, and has in some instances proved fatal.*

The Diseases of Plants employed as articles of food should be inquired into, as they are by them deprived of a considerable portion of their nutritive qualities, and even rendered deleterious: thus to the ergot or blight in rye, a most extensive and fatal endemial gangrene has been traced in France, and there is reason to suppose that a similar disease has been produced from blighted wheat in England.

Popular Medicine.—Under the head Endemic Diseases, we touched upon a branch of this subject, but it is worthy of being still farther enlarged upon. In many districts periodical bathtings, bleedings, purgings, vomitings, diet drinks, &c. are resorted to, under the supposition that sickness in general is prevented by such practices, while there are other practices adopted for the prevention and cure of particular complaints. Rum and milk, egg and brandy, and similar disguised drams, are in high estimation in incipient cases of phthisis in some districts, and contribute to swell the number of annual victims to that scourge of our islands. The popular remedies used for the diseases of cattle and other animals should also be noticed.

Hospitals.—An account of the establishments of this description, whether for the reception of particular diseases, as fever, mania, syphilis, &c. for lying-in women, foundlings, blind, deaf and dumb, or for more general purposes, should be a very principal object of the medical topographer's inquiries. He should inform us of the site, size, and plan of the hospital, the number and accommodation of the wards, with the methods of ventilating, warming, and cleansing them: the plans for separating and classifying the patients, their numbers, and the measures pursued for obviating or checking contagious diseases among them; the materials and arrangement of their beds, bedding, and other articles of furniture; the means of collecting and conveying the sick to the hospital, with a statement of the obstacles or facilities of access to the building itself, as well as to its various apartments. We should have an account of the plan, extent, and arrangement of the kitchens, baths, and wash-houses, and of their supply of cold and hot water, and steam, together with a detail of all contrivances for the abridgement of labour; the diminution of the consumption of fuel; and the increase of the nutritive quality of the food, or its fair,

* The diseases produced by the use of various animals, while out of season as it is called, should be considered under the article "Diet."

regular, and comfortable distribution. Knowing, as we do, how much the individual comforts of the sick, and the general good order of an hospital, depend on the water-closets or "latrines," we should attach great importance to the description of their site, size, and actual state, the extent of their supply of water, air, and light, and the measures adopted for removing the soil, or preventing the diffusion of unpleasant and unhealthy effluvia. To all this information on the immediate accommodations for the sick, we should wish to be added an account of the storehouses and offices of every description; the airing ground for the convalescents; the places of reception for the dead, with the modes of disposing of the bodies, &c. &c. We should have also a statement of the rank, number, salaries, and duties of the various officers of the establishment, whether medical, surgical, or purveying, with an enumeration of the servants of different classes, their wages, the proportion which they bear to the sick, and the respective duties which they perform. In short, we should wish for information on every point subservient or preparatory to the grand objects of administering food, medicine, and surgical assistance. We should then be prepared for a view of the mode of carrying on the medical, surgical, pharmaceutical, and purveying duties, which would naturally lead us to the history of new or peculiar practices or operations; accounts of new remedies; details of the diet, ordinary and extraordinary, administration of wine, and other cordials, &c. The sources of revenue from which these wants are supplied should be specially enumerated, and, from all these premises, we should have no difficulty in entering into a view of the expences of the establishment. The nature of the records and annals kept at the hospital should be stated to us, and, from these, interesting information on comparative mortality, prevalence of disease, and peculiar epidemics, originating either from within or without, might be afforded; as well as satisfactory notices on every other point, medical, statistical, or financial.* The same principles of examination should be applied to prisons, lazarettos, workhouses, &c.

If there are any veterinary hospital establishments, they should be described; and any peculiar practices or operations by the regular profession or quacks should be mentioned.

Spontaneous Cures.—Diseases in general have not a natural tendency to terminate in death, and some, if not interfered

* We have already given this outline of inquiry into the state of hospitals in our review of Dr Carter's work, Vol. XVI. p. 76, but we think it more convenient and more adapted to the purposes of the present paper to reprint than to refer to it.

with, proceed spontaneously to a favourable termination. The medical topographer should investigate these cases, and should endeavour to discover how far external circumstances, which do not come under the head of medical means, may have aided the efforts of nature. This inquiry will also lead him to the investigation of the effects of the climate and situation which he describes, on diseases imported into it. The disease for which change of climate has hitherto been principally recommended in this country has been Phthisis; but there can be little, if any doubt, that many lives have been sacrificed in this way. Physicians, judging from latitude, have supposed that many situations should be favourable to phthisical patients, which, on trial, have proved remarkably the reverse. Many parts of the south of Europe come under this character, from the nature of their climate alone, and many others which are more fortunate in this respect, are eminently defective in all the domestic and medical comforts which are of the last importance to the recovery of the invalid. The effects of climate in accelerating the cure of syphilis, of cutaneous affections, of diseases produced from the excessive employment of mercury, and of other chronic affections, should also be an object of inquiry.

The State of the Practice of Physic and Surgery, as well as that of *Empiricism*, should be noticed; the privileges or the control exerted over the members of the profession, with their divisions, numbers, &c. should be stated; as also their various institutions, libraries, societies, &c.; their peculiar doctrines and practices should be noted generally, and any thing of special interest should be particularized; the progress of *Vaccination* should be minutely inquired into. Upon the circumstances above stated, either singly or combined, will greatly depend the last and most important object of the investigations of the medical topographer, with which we shall close this class of our suggestions.

Longevity.—Not only the remarkable instances of longevity should be given, but a general view of the mortality among all ages and sexes, extended to as long a period of years as the inquirer can refer to, marking those which have been particularly affected by epidemic or contagious visitations. If the inquiries of the topographer extend over a large surface of country which comprises several districts, tables of mortality for each district should be given, otherwise a very incorrect idea may be impressed on the mind of the reader; thus, from Dr Price's calculations, there is great reason to suppose that in hilly districts, half the numbers born, live to the age of forty-seven, and that one in twenty reach so far as eighty years of age; while, in marshy

districts, one only in fifty-two attain that period of life, and only one half the numbers born, survive to the age of twenty-five. There is also, as is well known, a considerable variation between the ages of persons who reside in towns and in country parishes, inasmuch, that, in some instances, the difference is more than double, some cities being calculated to give a mortality of one in nineteen, and some healthy country villages being reported so low as one in forty, fifty, or even sixty, although it must be confessed that there is great reason to suppose that these estimates have been overrated, from inattention to concomitant circumstances. It is certain, however, that those employed in the Insurance of Lives estimate the longevity of a country village at fifteen, while that of the metropolis is only rated at ten and a half.*

IV.—Under the fourth head should be classed those miscellaneous topics of inquiry which more remotely bear upon the medical topography of a town, district, or country, and which could not be so conveniently arranged under any of the other heads. Peculiar circumstances will of course contribute to the enlargement of these, but the following appear the most important.

A catalogue of the works already written on the subject of the places described, whether referring to their topography, natural history, or diseases.—Notices on the subjects of the colleges, or schools for medical education, of their museums, and libraries, and of the rare and curious articles contained in them, whether preparations, books, or manuscripts.—Notices on singularities in the formation of the brute, and more especially of the human species, as dwarfs, giants, cretins, &c., and on such persons as have been remarkable for their physical powers and propensities, as strength, voracity, &c. &c.—Notices of eminent medical authors and practitioners who have flourished or live in the places described.—Notices on important and curious objects of botany, mineralogy, natural history, &c. As the excellent directions of Professor Jameson, addressed to the contributors to our College Museum, may not be in the possession of many of our readers, and as they will enable any common observer to preserve various important contributions towards the natural history of the place where he resides, or which he may accidentally visit, we shall conclude this paper with an abridged statement of them.

Quadrupeds and Birds.—Quadrupeds and Birds to be preserved by

* Hints for an Insurance Company for Kent and Sussex, 1804, p. 7.

taking off their skins, which may be easily done, by making an incision in a straight line, from the vent to the throat, and removing the skin by means of a blunt knife. The skull and bones of the legs and feet are to be left. The brain, eyes, and tongue, ought also to be extracted. The skin, in order that it may be preserved from decay, should be also rubbed on the inside with some one of the following compositions: 1st, Tanners' bark well dried and pounded, one part; burnt alum, one part; and in a hot climate one part of sulphur; to be well mixed together.—2d, Tanners' bark well dried and pounded, one part; tobacco, perfectly dried, one part; burnt alum, one part; add to every ounce of these ingredients one ounce of camphor, and half an ounce of sulphur. (N.B. No sublimate or arsenic ought to be put on the skins, as both substances destroy their texture.) These compositions to be kept for use in well corked bottles or jars.

"Skins, when thus prepared, and partly dried, must be packed carefully in boxes, the lids of which ought to be pasted up, and in the paste used in fixing the paper, a little corrosive sublimate must be put, which prevents insects from eating through the paper.

"*Reptiles and Fishes*.—Reptiles and Fishes are best preserved in spirit of wine, rum, or whisky, some of which must be injected into the stomach, through the mouth, and into the other intestines through the anus. Before putting them into bottles, jars, or barrels, they ought to be washed clean of slimy matter. If long kept in spirits before they are sent, the spirits should be changed two or three times. The jars or bottles ought to be closed by means of sheet-lead and bladders. The larger reptiles, as crocodiles, and the larger fish, may be preserved in the same manner as quadrupeds and birds.

"*Animal Concretions*.—Concretions of various kinds are occasionally found in the brain, lungs, heart, liver, kidneys, gall-bladder, intestines, and urinary bladder. The stomachs of many animals afford concretions of different kinds, particularly those known under the name of *bezoar stones*; and travellers inform us, that stones are met with in the eggs of the ostrich. All of these bodies are interesting and valuable to the natural historian.

"*Skeletons*.—Collectors ought not to neglect to preserve the skeletons of the different species of animals. Of man, the skull is the most interesting part, as it varies in the different races of the human species, and is also frequently singularly altered by the practice of savage tribes. The best way of cleaning bones is to expose them to the air, and allow the insects to eat off the flesh. This being done, they ought to be washed with sea-water, and afterwards freely exposed to the sun. The best skulls are obtained by putting the whole head in rum or whisky, or a strong solution of alum; and both male and female head ought if possible to be preserved.

"*Molluscous Animals, Vermes and Zoophytes*.—Molluscous animals, such as cuttle-fish, the inhabitants of shells, &c. vermes or worms, and zoophytes, or animals of the coral and other allied kinds, ought all to be preserved in spirits; and in the two former classes, viz. the mollusca and vermes, the spirit of wine should be injected

into the intestines, by means of a syringe, to prevent the putrefaction of the internal parts, and the consequent destruction of the organs of digestion, respiration, and of the nervous system. Many zoophytes or corals, or rather their houses, may be preserved dry; but fragments of every species ought to be put into spirits, that the real structure of the animal may be discovered.

"*Shells*.—Shells, or the coverings of molluscous animals, are anxiously sought after by the naturalists, not only on account of their great beauty, but also from their intimate connection with the various fossil species met with in rocks of different kinds. The best live shells are collected by means of a trawling-net, such as is used by fishermen, if the depths are not too great; they are also brought up by the cable in weighing anchor, the log-line, and in sounding.

"After a storm, good shells may be picked up on sea beaches or shores, as the violent agitation of the ocean in a tempest separates them from their native beds, and often casts them on the shore. Shells that have been much tossed about by the waves are of less value than fresh ones; but these, when other specimens are not to be got, ought to be carefully collected. Many interesting shells are found in rivers and lakes; and numerous species occur on the surface of the land.

"Fresh shells, or those in which the animal is still alive, ought to be thrown into hot water, the temperature of which may be gradually brought to the boiling point, by the repeated additions of hotter portions, by which means the animal will be killed. The shells are allowed to cool for two or three minutes, and then the animal is picked out.

"*Insects*.—Beetles of every kind are speedily deprived of life by putting into boiling water, which does not injure those having black, brown, or any dark colour; but those which are covered with fine down, or have brilliant colours and lustre, should not be exposed to moisture, but are easily killed, if put into a phial, and placed in a vessel of boiling water for some time. When the insects are quite motionless, such as have been in the water should be exposed to the air and sun for a day or two, until perfectly dry. In this state, they are to be placed in boxes with cotton-wool, along with camphor. Beetles may also be preserved in spirit of wine.

"Butterflies, moths, and many other tribes of insects, with delicate and tender wings, may be easily killed, by pressing the thorax or breast betwixt the finger and thumb; and it is preferable to have the wings closed, because they thus occupy less space, their colour and lustre are better preserved, and they can be expanded afterwards by the steam of hot water. Care should be taken that the antennae or feelers and legs are not injured. A pin should be stuck through them, by means of which they are fastened to the bottom of a box lined with cork, or to one of deal, or other soft wood. Camphor ought to be put into the box.

"The arachnides or spiders are best preserved in spirits.

"In collecting insects, we use either the forceps or a net. The

forceps are about ten or twelve inches in length, provided with fans of a circular or other form, and are covered with fine gauze. They are held and moved as a pair of scissors. The net is very easily made. It is of gauze, or any very fine open muslin, made upon a piece of cane of four feet long, split down the middle about the half of the length: the split part is tied together, so as to form a hoop, upon which the gauze is sewed in the form of a bag; the lower part serves as a handle, and with this, all flying insects may be very easily caught. When the insect is once within the rim of the net, by turning it on either side, its escape is completely prevented by the pressure of the gauze or muslin against the edge of the hoop.

"*Crabs*.—Crabs, lobsters, &c. may be suffocated in spirits of wine or turpentine, and then dried in an oven.

"*Crustaceous Animals*.—Sea stars, after washing in fresh water, may be extended on boards by means of pins, and when dry, laid between folds of paper, and packed in a box with a little camphor.

"In Echini or Sea Eggs, the soft internal parts are to be extracted by the anus: they are then to be stuffed with cotton, and carefully packed with tow or cotton. Particular attention should be paid to the preserving of the spines.

"*Seeds*.—In collecting seeds, it is desirable that they should be well ripened, and dried in the sun. Large quantities should never be put together, but only a few, and these well selected. They retain their vegetative powers much better if tied up in linen or cotton cloth, than in other substances; and if then packed up in small boxes, and placed in an airy part of the ship, there is every probability of their arriving in a sound state. The same remark applies to bulbous roots. Bulbs should never be put in the same box with seeds. The boxes with seeds, and with bulbs, ought never to be put into the ship's hold.

"*Dried Plants*.—The greater part of plants dry easily between leaves of books, or other paper. If there be plenty of paper, they often dry best without shifting; but if the specimens are crowded, they must be taken out frequently, and the paper dried before they are replaced. Those plants which are very tenacious of life ought to be killed by the application of a hot iron, such as is used for linen, after which they are easily dried. The collections to be carefully packed in boxes with camphor, and closed in the same manner as directed for quadrupeds and birds.

"*Minerals*.—1. Every mineral, from the most common clay or sand to the gem, ought to be collected.

"2. Specimens of rocks, such as the granite, porphyry, limestone, &c. should, if possible, be broken from fixed rocks, and not from loose masses, which are generally decayed. In selecting the specimens, one set ought to represent the different varieties of appearance presented by the rock in the fresh state, another the rock in its different states of decomposition.

"3. When the specimens of simple minerals, or rocks, contain crystals, they ought to be wrapped in gauze-paper, then in cotton, and afterwards in several folds of strong wrapping-paper.

"4. The specimens of rocks ought, if possible, never to be less than four inches square, and one inch in thickness, and of a square form. As soon as they have been prepared, they should be labelled, and wrapped in several folds of strong wrapping-paper. When paper cannot be procured, moss, or other soft vegetable substance, may be substituted for it.

"5. The sands of deserts, steppes, and rivers, ought to be carefully collected. The sands of rivers often contain precious stones and metals, and hence become very interesting objects to the naturalist. The sands of deserts and steppes throw much light on the nature of the surrounding country, and are much prized by the geologist.

"6. Numerous mineralized animal and vegetable remains occur imbedded in strata of different kinds; all these ought to be very carefully collected and preserved. Abundance of shells, in a fossil or petrified state, are met with in limestone; of vegetables in slate-clay, sandstone, &c.; and numerous bones, and even whole skeletons of quadrupeds, birds, amphibious animals, fishes, and even of insects, occur in rocks of various descriptions.

"7. The mineralogist ought to provide himself with hammers of various sizes. One for common use of two pounds weight; others, three, four, and six pounds weight. He ought also to provide himself with chisels of various sizes and forms, and with a set of small boring-irons. A miner's compass, small magnifying-glass, goniometer, and blowpipe, ought also to form part of his equipment. The two first are indispensably necessary for the travelling mineralogist. Nor should he neglect to provide himself with a strong bag; the form that of a fowling-bag, lined with strong leather, covered with wax-cloth, and the outside of some durable cloth."

Our original intention in preparing this paper was, to confine ourselves to subjects connected with our own islands, but, in filling up the first outline, we found so many important queries and illustrations presenting themselves from among the phenomena observable in foreign countries, that we were unconsciously led to extend our heads of inquiry so as to make them applicable to these also. In truth, the same causes of disease exist in all countries more or less, while their effects are proportionally elicited by circumstances peculiar to each. That physician who has studied the influences of external circumstances on the human constitution in one situation, cannot, therefore, be long or greatly at a loss to detect them in another, and thus observations made under the burning sun of the Indies may materially assist the investigation of the origin of disease in the less fervid temperature of northern climes. The invitation which we have already held out to the practitioners of the British Islands, we now extend to those of our more distant colonies, and we shall feel happy to afford insertion either to their answers or their inquiries in the future numbers of this Journal.

H.

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AN ESSAY
ON
SYPHILIS;
SUBMITTED,
BY AUTHORITY OF THE PRESIDENT AND HIS COUNCIL,
TO THE EXAMINATION OF THE
Royal College of Surgeons of Edinburgh,
WHEN CANDIDATE
FOR ADMISSION INTO THEIR CORPORATION.
BY
GEORGE BALLINGALL, M.D. F.R.S.E.
FELLOW OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND
LATE SURGEON TO HIS MAJESTY'S 33^d REGIMENT.

*Satis constat ex his, quae super dicta sunt, Lib. II. Cap. 8., virus venereum nulla
methodo certiore, tutiore, efficaciore, profigi potest, quam hydragryd.
Astruc De Morb. Ven. Lib. IV. Cap. 6.*

EDINBURGH:
PRINTED BY RALFOUR AND CLARKE.
1820.

AN ESSAY

SYPHILIS:

ALEXANDER KENNEDY, M.D.

FELLOW OF THE ROYAL SOCIETY, AND OF THE ROYAL COLLEGE OF

PHYSICIANS OF EDINBURGH,

THE FOLLOWING ESSAY IS INSCRIBED,

AS A MARK OF RESPECT

FOR HIS PROFESSIONAL CHARACTER,

AND OF GRATITUDE

FOR HIS PRIVATE FRIENDSHIP.

TO

ALEXANDER KENNEDY, M.D.

FELLOW OF THE ROYAL SOCIETY, AND OF THE ROYAL COLLEGE OF
PHYSICIANS OF EDINBURGH,

THE FOLLOWING ESSAY IS INSCRIBED,

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FOR HIS PRIVATE FRIENDSHIP.

ESSAY

ON

SYPHILIS.

THE limits which I have prescribed to myself in the following Essay, preclude me from entering at large into the history of the venereal disease, or engaging in the important discussion respecting its general treatment, which has lately occupied so large a share of professional attention. All I propose, therefore, in the following pages, is to make a few observations on the treatment of the local or primary symptoms of Syphilis; * stating, in the first place, the reasons which induce me (notwith-

* In Dr. Cullen's Nosology, the term Syphilis appears to be restricted entirely to a constitutional affection, and hence it may be thought inaccurate to speak of the primary and secondary symptoms of Syphilis; but this language is now so much sanctioned by common usage, and runs so little risk of being misunderstood, that I consider no farther apology necessary for adhering to it in the course of this Essay.

standing all that has been written on the opposite side of the question) to consider the mode of cure by mercury as still the most eligible.

Soon after the appearance of the venereal disease in Europe, the efficacy of mercury in promoting its cure was very generally admitted; and this remedy, which was prescribed with increasing confidence for a period of three hundred years, we have lately been called upon to abandon, for, I scarcely know what,—for confinement, rest, and water gruel—for simple dressings and decoctions of sarsaparilla:—we are called upon to relinquish one of the most powerful remedies which the *Materia Medica* contains, and to substitute one comparatively inert;—we are called upon to relinquish an article which we are in the habit of prescribing by grains and scruples, and to substitute one which, to use the expression of a late eminent London practitioner, ought to be given in the shape of a pudding or a pie. Under these circumstances, we may well exclaim, with a late periodical writer, “What are we now to think of experience in physic? Why was Syphilis considered to be incurable before the supposed discovery of mercury as its specific? Why is the abuse of mercury in Hepatitis, and other diseases, never followed by symptoms having any resemblance to those of Syphilis? And why

“have so many practitioners been almost uniformly successful in their treatment of Syphilis by mercury?” *

In speaking of the use of mercury in the treatment of Syphilis, we have the following observations by Mr. Pearson, whose experience in this disease gives him a claim to attention which few others possess. “My opportunities of administering mercury,” says he, “have not extended to less than twenty thousand cases, and I feel myself fully authorised to assert that it is a remedy always to be confided in under every form of *Lues Venerea*; and, where we have only this one disease to contend with, that it is a certain antidote, and as safe in its operation as any other active medicine, drawn from the vegetable or the mineral kingdom.” † When treating of the sarsaparilla, the same author observes: “I have employed the sarsaparilla in powder and in decoctions in an almost infinite variety of cases, and I feel myself fully authorised to assert that this plant has not the power of curing any one form of the *Lues Venerea*.”

* Edinburgh Medical and Surgical Journal, vol. 13, page 492.

† Pearson on the effects of various articles in the cure of *Lues Venerea*, 2d edition, page 117.

"nerca."* No stronger language could have been found to mark the sentiments of this eminent surgeon in favour of the superior efficacy of mercury; and when we reflect that his sentiments were thus expressed in 1807, it is not easy to believe that, within the short period which has since elapsed, such a revolution can have taken place either in the constitutions of patients, in the nature of the disease, or in the powers of the remedy, as to render them altogether inapplicable at the present day.

When we consider farther, that, at the time Mr. Pearson wrote, he expressed the opinion of almost every well-informed member of the profession, it is matter of surprise that, within the short period of seven or eight years, † a considerable proportion of that profession should have been led to renounce their former opinions, and to adopt a line of practice widely different from what was formerly thought necessary.

While I feel myself yet unprepared to relinquish the general use of mercury in the treatment of Syphilis, and while, (to use the language of Doctor Curry) "I should deeply lament the hasty rejection

* Pearson, Oper. Citat. 2d edition, page 25.

† This refers to the date of Dr. Fergusson's paper in the Medico Chirurgical Transactions, vol. iv. page 1.

"tion of this invaluable article; because I believe, "that, if impartially estimated, it will be found to "be, like small-pox inoculation, though occasionally "productive of inconvenience, yet the preventative "of infinitely greater mischief from the spontaneous "course of the disease which it is intended to mitigate;"* I am still far from being disposed to undervalue the labours of those eminent men, who have recently written in favour of the non-mercurial treatment of Syphilis: I fully appreciate the benefits accruing to scrophulous and phthisical patients, from the proof which has been given of the possibility of curing the disease without mercury; and I am most ready to admit, that the recent discussions upon this subject have been of infinite advantage, both to the profession and the public, by restricting the use of so powerful a remedy, which, like all others, in the same proportion that it is useful, under judicious administration, is capable of doing mischief by its unnecessary, ill-timed, or injudicious employment: to recur once more to the language of Dr. Curry, "I am ready to grant, that, "like antimony, opium, and every other active remedy, mercury would probably do little good, if it

* Curry's Examination of the Popular Prejudices against Mercury, page 40.

"were not also capable of doing some harm. The
 "knife and the caustic are unquestionably powerful,
 "and in so far may be made dangerous instruments;
 "but who ever blames the surgeon for employing a
 "sharp knife or an active caustic, seeing that both the
 "one and the other are to be directed by his eye and
 "guided by his hand? or who would be so absurd as
 "to expect, that the couching needle and the scalpel,
 "which perform such wonders in the hands of an ex-
 "pert oculist and dexterous lithotomist, can be em-
 "ployed with equal safety or success, by every
 "clumsy or inexperienced person who may fancy
 "himself equal to the task of using them? What
 "these instruments are, then, with respect to the
 "surgeon, I contend, and hope to prove, that mer-
 "cury is, under the management of a judicious phy-
 "sician, capable of doing, with a speed which is
 "often indispensable, and for the most part with
 "perfect safety, what no other means, hitherto
 "known, can at all effect.*"

In professing myself an adherent to the mercurial treatment of Syphilis, it becomes necessary to acknowledge, that it is the only mode of treatment of which I have had any extensive experience; but that experience appears to me, when taken in con-

* Curry on the Popular Prejudices against Mercury, page 22.

junction with the opinions of many eminent writers, so conclusive in favour of this remedy, that I feel no common degree of reluctance to believe that I have hitherto been adopting a mode of practice which was either unnecessary or improper.

Upon referring to a register of sick in my possession, which was kept at Masulipatam in the East Indies, from the 15th of March, 1810, to the 17th of February, 1811, I find that, out of a detachment of the 2d Battalion of the Royals, consisting of about *five hundred* men, *eighty-six* venereal cases were admitted into hospital; that these were, upon an average, *twenty-two* days each under treatment; and that not more than *seven* secondary cases could possibly have occurred.*

This is the only period of my experience in the treatment of Syphilis, of which any documents in my possession enable me to speak with precision: but when I recollect that nothing peculiar was observed, during that period, either in the appearance of the disease, in the progress of the cures, or in the number of secondary cases occurring, I cannot but look on the above with some degree of confidence as

* The proportion of venereal cases which occurred at Masulipatam was greatly below what I was accustomed to meet with in India, owing to the vigilance and activity of Mr. Annealey, the garrison surgeon, who superintended the Lock Hospital.

a tolerably correct estimate of the result of all my observations on this point, and the estimate must necessarily be rather an unfavourable one, from my having included, under the head of secondary cases, all those whose names occur a second time in the register, although of these it is probable some were re-admitted with recent infections instead of secondary symptoms. When I consider again, that, for many years of my life, I was in the habit of seeing at least from *ten to twenty* venereal cases daily; that these cases were almost uniformly treated with mercury; that the cures were as speedy, and the relapses as few as I have stated them to be at Masulipatam; and that, in the whole course of my observation, I have seen only *one* man die of this disease, I must necessarily look upon mercury as more uniformly successful in the cure of Syphilis than any other remedy in any other disease with which I am acquainted.

Although the recent discussions upon this subject have in some measure taught us to look upon Syphilis as a progressive disease, which in many cases will exhibit cutaneous eruptions, and other secondary symptoms, whatever mode of treatment may be adopted; and although we may thus consider ourselves relieved from a load of responsibility which was formerly thought to lie heavy on the shoulders

of the profession; I find that patients are not yet by any means prepared to go along with us in shaking off this burden, but are still almost uniformly inclined to believe, that, by a judicious treatment of the primary symptoms, the disease may be cut short in its progress, and the occurrence of a secondary affection altogether superseded; * And if it shall eventually appear that secondary symptoms are more rare where mercury has been employed in the cure of the primary ulcerations, which some statements render probable, no apprehension of the injurious effects of this medicine on the constitution (which it has lately been the fashion to exaggerate) should deter us from its employment: For when I reflect upon some thousand cases, both of Syphilis and Liver disease, in which I have employed mercury, with a hand perhaps too unsparing, and when I think of the health which many of my patients have afterwards enjoyed, I cannot believe that there is any great proportion of human constitutions upon which this medicine exerts the deleterious effects which have lately been ascribed to it.—“Men may amuse themselves by declaiming against mercury, as an uncertain remedy; they may utter querulous details of its baneful effects, and relate tra-

* See a letter in the Appendix from Mr. Sandeman of Brechin. See also some observations on this subject in the Edinburgh Medical Journal, No. 64, p. 456.

“gical stories of its malignant influence on the
 “bodies and minds of those who use it; but sure-
 “ly all this turbulent eloquence may be directed
 “with equal advantage, not only against every po-
 “tent article of the *Materia Medica*, but against
 “the very aliment by which we are sustained.”*
 In support of my opinion of the safety of mer-
 cury, when employed with a tolerable share of
 judgment, many strong passages might be selected
 from the writings of Mr. Benjamin Bell, Mr. Pear-
 son, Dr. Curry, Dr. Watt, and others; but the fol-
 lowing passages from two writers who have done
 much to correct the abuses formerly existing in the
 employment of this medicine, will probably be ad-
 mitted as less objectionable evidence: Mr. Car-
 michael in his reply to the review of his *Essay on*
Venerical Diseases, says, “I beg to observe, that I
 “have not, nor do I believe that any other person
 “has, witnessed ulcers on the skin and throat, and
 “nodes on the bones, from the exhibition of the
 “most extensive courses of mercury in any other
 “than venereal diseases, nor even an eruption
 “except the well-known mercurial eczema;”†
 and Mr. Matthias, in summing up his observa-

* Pearson, *Oper. Citat.* page 116.

† *Edinburgh Medical and Surgical Journal*, vol. xi. p. 456.

tions on the mercurial disease, observes, “when
 “this mineral is administered with prudential re-
 “serve, and with discreet knowledge, its effects
 “are *blessed, safe, efficacious, and permanent.*”*
 Having thus finished my preliminary remarks on
 the use of mercury in Syphilis, I proceed to the more
 immediate business of this *Essay*, the consideration
 of the primary symptoms of the disease.

CHANCRES.

The much-admired definition of chancre by Mr.
 Hunter, is only applicable to a very limited number
 of the ulcerations on the genitals which now come
 before us in the common course of practice, in so
 much that Mr. Carmichael observes, “this disease,
 “as described by Hunter, has diminished in so ex-
 “traordinary a degree in this country, that, strange
 “to say, I have from that period met with only one
 “case of true chancre.”†

To Mr. Carmichael we are under great obliga-
 tions for his description of the phagedenic and
 sloughing ulcers of the genitals, and for his obser-
 vations on the injurious effects of mercury in their

* Matthias on the *Mercurial Disease*, 3d edition, p. 256.

† *Viz.* from the period at which the publications of Messrs.
 Guthrie and Rose fell into his hands.

treatment: but the practical utility of his other subdivisions of primary venereal ulcers, does not, I confess, appear to me by any means so obvious; and, if in any instance, we have introduced too much refinement into the diagnosis of disease, it is, I apprehend, in the case before us: in affections of the internal organs, the mistaking disease of one viscus for that of another may, in many cases, be productive of the most serious evils; but in the case of external ulcers, cognizable by the sight, and by the touch, seated upon the same parts of the body, occupying the same structure, originating in the same way, and so much alike that they are liable to be confounded one with another, even by a cautious observer, I will venture to assert, that the same or similar remedies are likely to prove beneficial, and that, for all practical purposes, the necessity of a very minute diagnosis is done away.

As the characteristic of the Hunterian chancre, "the circumscribed hardness of the edge and base," is admitted to vary in degree, and as this hardness may be shaded down until it becomes nearly undistinguishable, I think it advisable not to confine ourselves too rigidly to this definition in deciding upon the mode of cure; particularly if we are to exclude from the beneficial operation of mercury all ulcerations of the genitals which do not possess the

Hunterian characters of chancre: for my experience convinces me that the cure of many of these ulcerations will be expedited by mercury, when a circumscribed hardness of the edge and base does not exist in any remarkable degree.

From the above considerations, I am inclined to follow Mr. Benjamin Bell in extending the appellation of chancre to sores on the genitals which offer a considerable variety in appearance; keeping in view the following observations which are applicable to a large proportion of these sores. "Chancres appear occasionally over all the external parts of generation, and in some instances even on the contiguous parts. I have known them form over the whole scrotum, on all parts of the penis, and even on the lower region of the abdomen, immediately above the pubes.

"In some cases there is only one chancre, but for the most part we meet with two, three, or even more; nay, in some instances, they cover almost the whole prepuce. In this case they run into one another, none of them are distinct, and the whole, when thus connected, give the appearance of a foul ulcer with hard edges, an unequal surface, and discharging a fetid ill-conditioned matter.

"A real chancre is seldom so large at first as the base of a split pea; the edges of the sore are elevated, somewhat hard, and painful; but although this is very commonly the case, yet, in a few instances, it is so much otherwise, that, instead of a small circumscribed sore, we meet with a slight superficial ulceration, not attended either with pain or hardness, and which, by the consequences that ensue, we find to be venereal."

With regard to the mode of treatment to be adopted in chancres, I have already at some length given my reasons for considering the employment of mercury as very generally advisable: at the same time, I may observe, that where no other symptom exists, the mercurial course required for the cure of chancres is neither severe nor protracted; in many instances a slight degree of ptyalism, kept up for three weeks or a month, will prove sufficient, particularly if the sores cicatrize under the use of local applications within this period. As to the best mode of introducing the mercury into the system, different opinions exist amongst the best informed practitioners; and this is perhaps a strong argument for considering it a matter of minor im-

* Bell on Gonorrhoea Virulenta and Lues Venerea, 2d edition, vol. ii. pages 15, 16, and 19.

portance. Circumstances may render it highly inconvenient for a patient to adopt the mode of cure by friction, and in such cases we may have recourse to the common blue pill: this again will be found in some constitutions to irritate the stomach and bowels, to produce griping, purging, and tenesmus; in which cases it will become proper to substitute friction, or to combine opium with the internal use of mercury. Confinement to the house is in all cases advisable, and should be urged, even at the risk of putting the patient to much personal inconvenience; but as we know that many patients are every day undergoing courses of mercury for the cure of Syphilis, who are under the necessity of concealing their complaints, and of following their usual occupations, we cannot consider a rigid confinement within doors so absolutely indispensable as some have represented it.

It is in all cases of chancre a desirable object to heal the ulcerations with the least possible delay; and in order to accelerate this, caustic applications have been very extensively and very successfully employed. My observations upon this point, however, confirm very decidedly the statements made by Mr. Bell, as to the risk of inducing buboes by an early application of caustic, and the propriety of deferring this and other stimulating applications, until

the mercury has affected the system. At page 328 of the work already quoted, Mr. Bell states, that out of twenty cases of chancre occurring in the common routine of practice, ten were treated by an immediate and effectual application of lunar caustic; while, of the other ten, five were treated with blue ointment, and five with common wax ointment. Of the ten treated by the application of caustic, no less than eight became affected with buboes, while only one bubo occurred in all the others. Mr. Bell conceiving also that buboes appeared less frequent from the application of caustic, where mercury had been previously administered, put this likewise to the test of experiment in a way to which I think little objection can be made. "Of forty-eight patients with chancres in an incipient state, and exactly as they occurred in practice, one half was treated in the manner that I have mentioned, by destroying the chancres with caustic immediately on my being desired to see them; while all the others were put under mercury for eight or ten days before caustic was used. In every other circumstance the method of treatment was the same. The difference, however, surprized me greatly. Of the twenty-four treated with the immediate application of caustic, twenty were seized with buboes, while only

"three buboes occurred in an equal number to whom mercury had been previously administered." *

These statements of Mr. Bell's have all along had much influence in deciding my practice in the treatment of chancres; and I can truly assert that all my observations tend to confirm his conclusions on this point.

Until the system becomes impregnated with the mercury, I would advise that the chancres be simply kept clean, by frequent washing and dressing with dry lint; and so soon as the mercurial fetor is perceived in the breath, and a slight degree of ptyalism commences, the sores are to be touched with the lunar caustic, or dressed with an ointment containing a proportion of the oxydum hydrargyri rubrum, or sub-acetas cupri; the latter I have found to be an excellent application to ulcers of this kind, and am even inclined to think it more generally useful than the red precipitate. The lotio hydrargyri oxymuriatis flava of the Pharmacopœia Chirurgica, is an application frequently found useful; but I recommend, with more confidence, from more extensive experience, the lotio hydrargyri submuriatis nigra, or black wash, of the same Pharmacopœia, which is, perhaps, of all other applications with which we are ac-

* Bell on Gonorrhœa Virulenta and Lues Venerea, 2d edition, vol. ii. page 329.

quainted, the most extensively useful to venereal chancres. The various degrees of indolence or irritability with which chancres are accompanied, will render the more or less stimulating of these applications preferable, and the same circumstance will suggest the propriety of occasionally varying the proportions of their component parts; it will also be observed in the treatment of these sores, that an application which in the first instance appears to be highly useful, soon loses its effect, from the parts becoming habituated to the same stimulus; and whenever the healing process seems to be at a stand, under one remedy, it is, in general, a sufficient ground for changing the application.

BUBOES.

"A venereal bubo is a painful swelling of a lymphatic gland, produced by absorption of the venereal virus."* These swellings occurring in the glands of the groin, are, in a great proportion of cases, so obviously the offspring of chancres, situated on the penis, and in some cases so easily to be traced to this source, through the medium of an inflamed lymphatic, as to have rendered it questionable whether they ever originate without the

* Bell, *Oper. Citat.* 2d edition, vol. ii. p. 26.

intervention of chancre; were we to subscribe to this opinion it would do away much of the perplexity which is frequently experienced in deciding upon the nature of glandular swellings in this situation; it is now, however, well established by repeated observation, that venereal buboes, capable of producing constitutional symptoms, do frequently originate without the previous appearance of chancre, and we are thus deprived of the important diagnostic symptom which would otherwise be afforded.

In most cases, the first indication of the formation of a bubo is a sense of weariness, stiffness, and pain in the groin, sometimes accompanied with numbness in the thigh of the affected side. Upon applying the fingers to the part, one or more of the inguinal glands are found to be somewhat swollen; and if a chancre exist only on one side of the penis, the swelling will be found to occupy the corresponding groin. These tumours are, for the most part, at first readily moveable under the skin, but as the swelling increases, the integuments naturally become more tense, and the tumours more stationary and more painful. Great variety exists in the violence of the inflammatory symptoms with which buboes are accompanied, and the rapidity with which they advance towards suppuration; although in most

instances the tendency to this termination is strong, and requires the most decided antiphlogistic means to counteract it, particularly in young and vigorous subjects, yet we meet frequently in phlegmatic, irritable, and scrophulous habits, with a description of bubo increasing slowly, attended with little pain, redness, or heat, and shewing little tendency to suppuration.

The only tumours with which the venereal bubo is likely to be confounded are scrophulous enlargements of the glands of the groin; tumours of the same glands originating from gonorrhœa, denominated sympathetic buboes; and tumours originating from ulcerations or cutaneous eruptions on the lower extremities. Lumbar abscesses and hernias, both inguinal and femoral, are also said to have been mistaken for venereal buboes; but this is a mistake so obviously the result of ignorance or inattention, that I do not conceive any practitioner of common judgment likely to fall into it. Between the true venereal and the scrophulous bubo, I regret to say, that we do not possess any adequate means of distinction: the former, however, is, in general, confined to one gland, is exceedingly painful to the touch, and this pain is said to undergo an exacerbation during the night: the tumour is, in general, rapid in its progress, and attended with consider-

able inflammation of the integuments. In scrophulous affections again, tumours are frequently distinguishable in more than one of the inguinal glands, and occasionally also in other parts of the body; these tumours are much less painful, they are more moveable under the integuments, their progress is slower, and attended with less inflammation on the surface; at the same time, they frequently acquire a much larger size than what the venereal bubo reaches. In cases of gonorrhœa, where the inflammation runs high, and where the habit is irritable, swellings frequently occur in the glands of the groin which are extremely difficult to be distinguished from Syphilitic buboes; they are chiefly to be known by the absence of chancres, and by observing whether or not they correspond in their origin, progress, and decline, with the extent of the urethral inflammation. Ulcerations and cutaneous eruptions on the inferior extremities sometimes give rise to enlargements of the glands of the groin, which are to be distinguished from venereal buboes, by our knowing that such ulcerations exist, by the total absence of other venereal symptoms, and, by observing that these tumours are frequently seated lower than venereal buboes, and more directly on the fore part of the thigh.

Whenever our assistance in the treatment of venereal buboes is required, at a period sufficiently early to render their cure by resolution practicable, the propriety of attempting the discussion of every tumour of this kind, is now so generally admitted, that it appears to me unnecessary to adduce arguments in favour of this practice. No time should be lost in putting the patient under a course of mercury, which will require to be continued for a longer period than is necessary for the cure of chancres; a month or six weeks will, however, prove in a large proportion of cases a sufficient time to keep up the mercurial affection of the system; and the mode of introducing the medicine by friction on the thighs, has been thought by some to deserve a decided preference in many cases of bubo, from its being thus made to pass through the diseased gland. Every part of the antiphlogistic regimen is to be combined with the use of mercury, and the assiduous employment of every local means to promote the dispersion of the tumour.

General blood-letting is a measure not often proposed in cases of this kind, and would probably very often be objected to on the part of the patient; there is no doubt, however, that when the inflammation is violent, in plethoric habits; and particularly, when, (as frequently happens) there is a fiery erysipelatous

appearance on the surface of the tumour, general blood-letting is the only means which can effectually avert suppuration. The abstraction of blood by means of leeches applied to the swelling is one of the most eligible and powerful means we possess, of alleviating the pain, tension, and other inflammatory symptoms attendant on these tumours; at the same time the application of sedative and astringent lotions, particularly solutions of the acetate of lead, is recommended by long and repeated experience.

In speaking of the diagnosis between venereal buboes and scrophulous swellings of the glands, I have pointed out the torpid and indolent nature of the latter as their chief characteristic; and in practice we must be prepared to meet with tumours of a mixed nature, evidently originating from a venereal infection, while in their progress they seem more akin to the scrophulous bubo, remaining for days and sometimes for weeks quite stationary, without shewing a decided tendency either to resolution or suppuration. This is one of the most tantalizing occurrences we meet with, the patient at every visit evincing a very natural anxiety to know what is to be the issue of his case, and urging his medical attendant to say whether or not his bubo will suppurate. In such cases I am happy to think

that we have a remedy in our power, which will, in a majority of instances, procure the discussion of the swellings, and in all of them will certainly expedite their termination either in resolution or suppuration—I mean the application of blisters to the surface of the tumours. This is a practice by no means so general as it ought to be, and to some I know that it is altogether new. Even since I began this Essay, I have learned from the conversation of some of my medical friends, who have had considerable experience in the treatment of syphilitic cases, that the application of blisters to venereal buboes is a practice of which they had no knowledge. The practice in question is one which I have been in the habit of using very extensively ever since I entered the army, now nearly fifteen years ago, and it may be supposed I am not the less inclined to persevere in it from finding it recently recommended in the following terms by a gentleman of Mr. Carmichael's talents and experience. "The buboes in this form of venereal disease, are often remarkably hard and indolent, evincing neither a tendency to disperse nor to suppurate. In such cases, the greatest advantage may be derived from the repeated application of blisters to the indurated bubo, which soon either cause the dispersion or the suppuration of

"the tumour, and thus free the patient from a troublesome symptom which might otherwise continue many months to torment him." *

When our efforts have failed in averting suppuration, and when it becomes evident that this process must take place, it is to be promoted by the assiduous use of warm fomentations, and emollient cataplasms; the latter to be applied as warm as the patient can bear, and to be frequently renewed.

For the purpose of opening venereal buboes, (which in general ought to be done as soon as a fluctuation is distinctly perceptible,) a common, or an abscess lancet, entered at the most dependent point of the tumour, and carried up through the centre of it, is in general the most eligible instrument; and nothing should induce us to be too sparing in the extent of the opening, which frequently leads to the formation of sinuses requiring renewed operations, and unnecessarily protracting the sufferings of the patient. Any hemorrhage which occurs from an opening of this kind, is in general rather beneficial than otherwise; but should it in any case prove troublesome, it may be restrained by a piece of lint inserted between the lips of the

* Carmichael's Observations on the Symptoms and Specific Distinctions of Venereal Diseases. London, 1818, 8vo. page 21.

wound, and secured by a compress and tight bandage; and in no case where buboes are of any considerable size, would I permit the lips of the wound to come into contact, as they sometimes adhere very speedily, and matter again accumulates within the tumour, demanding a new opening for its evacuation. When sinuses form either from a bad habit, from the tumour having originally a very extensive base, from the opening being too long delayed or too limited in extent, they are to be immediately laid open throughout their whole course, and the sores treated according to the common rules of surgery.

In the opening of venereal buboes, some have given a preference to the use of caustic, alleging that by destroying a portion of the distended and superabundant integuments, it accelerates the cure. I have scarcely, however, any personal experience of this practice, and have generally found that, where the opening with the lancet was sufficiently extensive, and the dressings admitted to the bottom of the wound, any superabundant portion of integuments which was found overhanging the surface of the sore was speedily reduced by suppuration, and did not often prove an obstacle to the cure.

In cases where buboes of an extensive size, advance to suppuration, and where the integuments appear firm and little discoloured on the surface, a small seton, passed through the base of the tumour, will be found a good mode of opening it.

In the following case, having failed to procure a passage for an eyed probe, containing a seton, a cure was accomplished, rather unexpectedly, by the use of an astringent solution.

In the month of October last, a gentleman applied to me for the cure of an open bubo, which, in consequence of what I considered very inefficient practice, had been allowed to come to suppuration. While endeavouring to heal the ulceration, a small tumour, resembling a common boil, formed above, and nearly an inch and half distant from the original sore; in a few days, this tumour was found to contain matter, and on pressing its surface pretty firmly, the matter was evacuated through the opening of the bubo. Seeing, from this, that a communication existed between the two, I thought it the most eligible mode of proceeding, to pass a seton from the lower opening, and bring it out through the small boil. With this view, I injected a quantity of warm water through the opening of the bubo, and by this means distended the little tumour above, so as to guide me in making an opening into it

with a common lancet; I then attempted to pass an eyed probe, armed with a skein of cotton, from above downwards, and from below upwards, but could not succeed in either way, owing to some membranous adhesions, which I found it impossible to break through with the probe. Foiled in this attempt, I contented myself with injecting a solution of the sulphate of iron, which passed readily from the one orifice to the other, and by the use of this, the sinus was completely and firmly healed in a few days.

Such are the principal points in the treatment of venereal chancres and buboes to which I think it necessary to advert. In an Essay of this kind, much must of necessity remain to be learned from other sources; and of the more complete treatises on the venereal disease, there is none which my individual experience induces me to appreciate more highly, than that of the late Mr. Benjamin Bell, to which I have so often referred in the course of this little work. Upon the great question which has lately agitated the profession, respecting the employment of mercury, much information is yet to be expected from the army surgeons, and particularly from a work on military surgery, by my friend Dr. Hennen, now in the press. I have been favoured by the author with a manuscript copy of his chapter

on Syphilis, and can promise the profession, that it will be found replete with original and interesting observation.* The doctor brings forward some very striking instances of the sufficiency and permanency of cures effected without mercury, while at the same time, he is far from denying the utility of this medicine in some cases of Syphilis, as will be seen by the following passages, which I have the author's permission to copy:—"While I have enumerated many of the ill effects produced by mercury, when it acts as a poison, I must give my strongest testimony to the admirable results which proceed from its judicious use, in persons not constitutionally disposed to be injured by it, and who do not lead profligate lives, or are not exposed to the foul air of hospitals fully saturated with its fumes." "Of its unquestionable efficacy there can be no doubt, but its indiscriminate employment in every case, whether old or recent, suspicious or confirmed, and without any view to the patient's diet, or his general health, has produced the most dreadful consequences. To reduce its employment within the limits where it can be sa-

* Since this passage was written, Dr. Hennen's work has been published, and will, I trust, be found to merit the encomium I have bestowed upon it.

"lutory only, without creating or evolving other diseases, is the best means of supporting the reputation of the medicine."

In adverting again to my own sentiments upon this subject, and to the urgency with which I have recommended mercury in the introductory part of this Essay, I trust I may be allowed to avail myself of the following observation of Dr. Percival of Dublin:—"The bulk of wise practitioners have all along adhered to the evidence of their experience, and have left the speculative part to contend for the palm of inventive ingenuity."*

* Transactions of the King's and Queen's College of Physicians in Ireland.

APPENDIX.

Letter from John Sandeman, Esq. Surgeon at Brechin.
(Referred to at page 9.)

BRECHIN, 26th March, 1820.

"MY DEAR-SIR,

"When I had the pleasure of seeing you lately in this part of the country, I promised to communicate my sentiments to you on the subject of the non-mercurial practice in Syphilis.

"The absolute necessity of using mercury in the cure of this disease was strongly impressed on my mind by what occurred in the Royal Artillery Hospital at Woolwich, in 1806, when I joined the regiment: Most of the venereal patients were at that time treated by the exhibition of acids; and the number of secondary cases which occurred was certainly greater than what I have ever seen either before or since under the mercurial treatment.

"At the time to which I allude, I would have considered it a reflection on my medical character to have discovered secondary symptoms in a patient whose treatment I had been entrusted with from the beginning, but the case is now greatly altered by the doctrines recently promulgated on this subject.

"I remain,

"My Dear Sir,

"Very truly yours,

"JOHN SANDEMAN,

"Surgeon, H. P. Royal Artillery.

"To Dr. Ballingall,
Howe Street, Edinburgh."

*Duplicate
Vol. 14*

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, 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 HENNER, 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

* 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.*

* Some of the barrack bedsteads 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 meninges 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 58th 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 McGrigor, 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,

"Omnia 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 papulae, with inflamed bases, and is principally confined to the forehead, sternum, and back.

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

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

Repet. medicamenta, et hab. pro potu commune solut. potasse 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. potasse 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 papulae over the face and back, extending in some degree to the extremities. The papulae 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. potasse supertart. Diet, spoon.

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

Repet. sodæ sulph. ʒj. 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. ʒj.

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 sowsen 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.

Haibent solut. potassæ supertart. pro pota 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 papule 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.—Papule 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 papule, 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 magnesie sulphat. ʒi.

Uter. 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. effervescent. 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 ʒj. 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 papulae, 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; his 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 pyralism 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 acuminate, 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 15th, 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 areolae. 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 almost 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 areolae, 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 pyalism.

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 areolae, 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 areolae 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. Pyalism 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 pyalism 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 acuminate 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 papulae 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 papulae. 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 papulae, upon which they appeared, (or now more properly speaking their bases,) are broader, and surrounded by areolae.

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 areolae 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 areolae 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 areolae 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 papulae. The vesicles are small, raised on inflamed bases, have depressions in their centres, and are confined to the areolae. The papulae 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 areolae 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 areolae, and some more papulae, like those on the arms, have come out on the nates and

thighs; the papulae 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 areolae are now of a brownish tinge.

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

The papulae 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 papulae 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 areolae 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 areolae 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 maculae, rather elevated than depressed.

July 13th.—Maculae 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 acuminate 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 maculae, but no evident depressions.

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

July 13th.—The brown maculae 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 puncture

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

June 18th, (6th day of inoculation.)—The bases of the papulae 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 3th.—Tubercles absorbed, but brownish maculae 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.

Mitt. sanguis ad $\frac{1}{2}$ 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 variella; 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 variella. 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.

Bibit pro potu commune solut. supertart. potassa.

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 pyalism; 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; pyalism 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. 3j in aquæ 3vi solutam, partitis vicibus.

Vesperi.—The hands begin to swell.

15th.—Salts operated freely. He has taken his breakfast with a good appetite; pyalism 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.

Vesperi.—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. Pyalism 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.*

* 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. 3i.

Vesperi.—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 pyalism through the day. The redness of the bases of the pustules evidently diminishes, and the intersutural 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.—Vesperi.—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-

* Sutton, Dimsdale, and the other 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. 390.

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. iij.

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.

25th.—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. Adest 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. antimoni. 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. antimoni. 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 papillae.

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

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

21st.—Did not sleep last night; has some pyalism to-day; rather less swelling of face; the eyes are still red, and very sensible to light; has much hoarseness and slight cough; hands and feet are swelled; the pustules over the trunk and limbs are much distended, and begin to 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°; temperature in the axilla 98°. A number of the crusts have dropped off from the chin and lower part of the face, leaving a considerable degree 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 break fast. 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. ʒj. 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 ʒj.

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.—Irritic 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 papulae 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 papulae continue to appear. There is great diversity in the size of the vesicles and papulae; 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 papulae 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 papulae 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. ʒi.

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 ducead.

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 109; 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 papule 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 papule 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 papule 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 acidulatam.

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 papule; another circular one, an inch in diameter, on the neck, containing two papule; 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 papule, 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 papule and tubercles, are of a raspberry colour. The fauces are considerably swelled, red, and studded with vesicles.

Admitt. liberrime aer egelidus. Habeat potum frigid. acidulat. et utat. gargasim. astring.

Vespere.—Complains more of his throat; the tonsils and submaxillary glands are much swelled, and there is considerable pytalism; 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 pytalism 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,

Magnesie sulphat. $\mathfrak{z}\text{j}$.

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. magnesie sulph. $\mathfrak{z}\text{j}$.

Cont. potus acidulat. et linctus ut heri.

Vesperi.—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.

Vesperi.—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 incrustated, 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 $\mathfrak{z}\text{i}$.

Vesperi.—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 gutt. xc.

12th.—Slept well last night, and is disposed to sleep at present. Swelling of the face has subsided in some degree. The pytalism 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 bullae, 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 pytalism appears to be gone. No swelling has taken place in the hands or feet. The bullae, 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. ñiv. 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 pytalism 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.

Section 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 bullae 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-

* 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 13th 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 Variella, 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 Variella also more mild; for in the cases Nos. 3 and 5, as well as in that of my youngest son, and of the child mentioned at page 44, 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.†

* 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-

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 18½, and that in the least crowded it was no more than 25½. In military hospitals we never allow less to each bed than a superficial square of 96 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 75, 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 *træ* small pox occurred a second time in a person who had previously gone through that disease, and who in the interval had varicella.*

* 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 develop, 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-

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 24th 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.

- Aasbein in Act. Reg. Soc. Med. Hafn. Vol. III. p. 250.
- Aaskow, or, (according to Kuhn, 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, 1769, p. 339.

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."

- * Amatus Lusitanus Corat. Med. Cent. 2. Schol. p. 433.
- Andresse, Dis. de Variola eundem Hominem pluries infantantibus. 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-Pox, (case from Jenner,) p. 62; and App. IV. 2d edit.; and in Monro's Observations on Small-Pox, p. 32.
- * Borsarius, Institution. Medicin. Vol. II. p. 157; &c, 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 Médecine continue, Vol. XII. p. 201.
- Camerarius, Theses misc. Tub. 1724.
- Chretien, ueber die Impfung der Blattern, p. 115.
- Commerce. Liter. Nor. 1741, p. 68; 1742, p. 413.
- De Coeylo in Verhandelingen van Haarlem, 2. 2. p. 206.
- Darcel 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 eenmal den helfden Menschen antasten. Haarlem, 1770, 8.
- in Comment. Lipsie, V. XVIII. P. 4. page 586.
- * Dryfhout, 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. 33.—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. 307.
- 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.
- Forester, L. 6. Obs. 43.
- Gastelier in Gazette de Santé, 1777, p. 30.
- Gazette Salulaire, 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

- Goulard in *Journal de Médecine*, T. X. p. 257.
 De Hsen, *Rat. Med. P.* 3. c. 7. § 2, 3.
 Hæner in *Baldinger N. Magazin*, X. p. 316.
 Hagendorn, *Cent. 2*, Obs. 60.
 * Haller's *Beitr. von Crell*, B. 2. p. 359. Note A.
 Hartenkeil in *Salzh. Med. Chir. Zeitung*, 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 für die Geburtshilfe*, &c. 2 B. p. 174.
 * Jenner, in *Medico-Chirurgical Transactions*, Vol. I. p. 279.
 * — Further Observations on the Variolæ Vaccine, 1799.
 * — Continuation of Facts and Observations on Variolæ Vaccine, 1800.
Journal des Savans, 1759, p. 346.
 * Jovanelli *Avis sopra la salut. uman.*, 1776, N. 9, p. 71, N. 10, p. 79.
 * Jurin, in *Philosophical Trans.* No. 575, Vol. XXXII. p. 191, or *Old Abridgement*, Vol. VII. p. 621.
 Kite, in *Memoirs of the Medico-Soc. of London*, Vol. IV. p. 114.
 Klaerich, in *Berlin Magazin*, IV. p. 473.
 * — *Hannov. Magazin*, 1776, n. 92.
 * 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.
 Loebner (Christ.) *Sendeschreiben von dem Wiederkommen der Pocken nach geschehener Einimpfung*, Erf. 1767. A. D. B. B. 12. 2. p. 233.
 Macquart, in *Journal de Médecine*, T. VIII. p. 39.
 * Maitland's Account of Inoculating the Small-Pox, 1722.
 Mareschal de Rougeres, in *Journal de Médecine*, 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, 226, 402, 404, 406, 456. Vol. XV. p. 454. This valuable work abounds with cases.
 Meier, in *Hannov. Magazin*, 4. p. 1625. 5. p. 295.
Mercur de France, 1759, p. 143, 145, 154, 175, 178, 188. 1760, p. 145, 165, II. p. 170.
 * Meza, *Compend. Med. Pract. fasci.* c. 1. c. 21, § 210.

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

- * 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. 609. Hist. 65.
 * Mosca, *Dissertat.* 2. Sul aria, p. 106.
 Muller, in *Baldinger N. Magazin*, V. B. p. 107.
 Mumsen, in *Act. Reg. Soc. Med. Hafn.* Vol. III. n. 3.
 * Nicholai *Patholog.* 2 B. p. 283.
Nouvellet économique et littéraire, 1760. p. 131, 1761. p. 33.
 Olivier, in *Journal de Médecine*, T. XI. p. 417.
 Oswald, in *Hufeland Journal der pract. Heilk.* 14 B. 2. St. p. 191.
 Pallas, *Bemerkungen auf einer Reise in die südlichen Statthaltschaften des russischen Reichs*, I B. p. 153.
 Paullini, *Cent. 3*, Obs. 27.
 Penada, *Osservazioni*, etc. v. Weigel, Italien. Bibliothek, 4 B. 1. St. p. 141, 142.
 Pettit, *Lettre sur quelques faits relatifs à la pratique de l'inoculation*. Paris, 1767-8.
Quartalschrift für altere Literatur und neue Lecture, 2 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. 15-81.
 * — *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 Enfants*, p. 250.
 Rouille Chameru in *Recueil périodique*, &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 Societät in's Hage 2 Deel*.
 Sarcone in *Epist. ad Hallerum*, V.
 * Sarcon. *Istor de mali osservati in Napoli*, p. 1. pag. 58.
 * Savers, in *Correspondence of the Directors of the Cow-pock Institution* Dublin, p. 28.
 * Simpson, in *Correspondence of the Directors of the Cow-pock Institution* Dublin, p. 28.
 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

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

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

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

Viennens, Histoire des maladies internes, &c.

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

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

* Wagstaff'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 Burnersius, from Dr Bateman's papers, 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, 1794, 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.

Printed by George Ramsay and Company.

Duplicate
Vol. 14

ADDITIONAL OBSERVATIONS

ON THE

CURE OF SYPHILIS WITHOUT MERCURY.

COMMUNICATED IN A LETTER TO DR DUNCAN, JUN.

By JOHN HENNEN, Esq.

DEPUTY INSPECTOR OF HOSPITALS FOR NORTH BRITAIN.

[From the Edinburgh Medical and Surgical Journal, No. 55.]

DEAR SIR,—I have been enabled to procure from the case books of the 88th regiment, which have been kept with the most praise worthy minuteness, by my friends Messrs Johnston and Bartlett, the enclosed analytical view of the hundred and five cases to which I alluded in my letter in your 54th number; and I take the opportunity of adding a few more remarks to that communication.

The appearances of the primary sores, contracted by sexual intercourse, which have presented themselves in the military hospital in the Castle, have varied extremely, but, in many instances, they have been very much influenced by their particular position. The following circumstances have been principally remarked in them. 1st, Ulcers on the internal integuments have generally had round callous edges, level surfaces, but little induration of base; they were less irritable than others, became sooner clean, and healed uniformly, but slowly. 2d, Ulcers on

the internal membrane of the prepuce have been generally either superficial or elevated; their surfaces covered with a light-coloured slough, or of a bright red with a villous appearance; their edges either regularly defined, or spread out like excoriations; their bases have been in general but little indurated, but when the ulcers have spread out, they have sometimes acquired a cartilaginous hardness, and have been extremely difficult to heal. 3d, Ulcers immediately behind the corona glandis, have been in general highly irritable, deep, scooped, indurated in their edges and base, foul, with membranous bridges, as it were, running across them, throwing off a perceptible slough, but, if mildly treated, soon healing after that event. 4th, Ulcers on the frenum have generally followed lacerations of that part, have had considerable induration of base, and have been generally slow of healing. 5th, Ulcers of the glans have been generally excavated, but with little hardness of base, quickly throwing off a slough, and then healing rapidly.

It has sometimes happened that where a sore has spread and occupied different textures, each of its parts has exhibited the character which has generally prevailed in sores confined to that particular texture. Thus in a sore which has implicated part of the internal prepuce, corona, and glans; on the first spot it has been elevated, on the corona it has been indurated and irritable, and on the glans excavated, but with little hardness. Besides these differences, which have been apparently occasioned by position, ulcers on the organs of generation take on different actions like those on other parts of the body, and are attended with simple purulent, or vitiated discharge; with increased or decreased action, with phagedena, sloughing, &c. Excoriations also appear, which in some instances proceed from mechanical injury, and in some from the application of an acrid matter, or from the acquired acrimony of the natural sebaceous secretion which lubricates the parts. In all these cases, early attention is a great means of preventing the sores from acquiring an irritable character. Cataplasms, astringents, and stimulants, have all their peculiar merits at particular times, and even the solution of arsenic has been found to give immediate relief from excruciating pain and phagedena, which had followed great irritation previous to the patient being taken into hospital. In some cases blood-letting, both local and general, has been had recourse to with advantage. In many cases cleanliness alone has effected the healing; but in no instance has the application been of such a nature as to destroy the structure of the parts, and by that means prevent the absorption of the virus; this is shewn by the occurrence of secondary symptoms in our hospital, which seldom take place when the primary sores are early destroyed. In

all cases, rest in the horizontal posture is an important part of the treatment. Some of the primary sores have gone on rapidly to a cure, some have been more slow, and a few have retained their hardened edges and bases for a long time; the great majority have healed as in ordinary cases, some leaving a pit or scar behind, and some, particularly the elevated sores, have had a scab formed, which on dropping off, has left the parts sound beneath. In many instances, after having healed up, the sores have broken out again without any obvious cause, in others, the friction of the clothes or rough handling has occasioned their re-appearance, and some on the prepuce have appeared as if mechanically torn open in the effort of uncovering the glans. In all these cases, the healing of the renewed sore was as certainly effected without mercury, as that of the original one.

We have had frequent opportunities of remarking two or more sores of different kinds existing at the same time; an irregular shaped diffused sore; an elevated sore, covered with a light coloured slough, as if a bit of shamoy leather had been stuck on by some tenacious substance; a groove or streak along the glans, as if made by a scraping instrument, filled with purulent matter; and the true and perfect chancre according to Mr Hunter's definition, or the true syphilitic ulcer according to Mr Carmichael.* This last has in some cases occupied the glans, in some the prepuce, while the sores of another description have been on the same part close beside it, or on another part at a distance. Three of these cases I particularly selected for examination and public demonstration in the hospital; in one, the Hunterian chancre was on the glans, and a sore without any hardness on the prepuce; in another, it was on the prepuce, and a simple ulcer on the glans; in the third, a most perfect specimen of Hunterian chancre occupied the internal prepuce close to the corona glandis; and at about half an inch from it, nearer the frenum, but farther from the glans, was an elevated

* To prevent all cavilling about words, I understand by true chancre or syphilitic ulcer, a sore answering the definition given by Mr Hunter in the 1st chapter of the 4th part of his treatise edited by Dr Adams, London, 1810, page 314, 326, and repeated by Mr Carmichael, Essay on the Venereal Diseases, &c. page 25. Although the callous nature of the ulcer has been handed down from the earliest writers on the disease, as characteristic, I use the term Hunterian, because the description by that eminent man is more generally known and read than those of the older writers, and is by some supposed to include every possible shade of sore capable of producing syphilis. Vide the authors in the collections of Lussinus and Gruner, and the work of Clowes the first English surgeon who has written on the venereal disease (in 1875); but particularly, vide Wiseman.

ulcer; in all these cases, the Hunterian chancre healed several days before the others.

Soldiers are gregarious in their amours, and we have frequently several men at the same time in hospitals, infected by the same woman with whom they have had connection in very rapid succession; some of them have one kind of sore, some another, and some both.* In all the instances in the following tables where there have been two or more ulcers, if one has possessed the Hunterian characteristics, both the secondary symptoms and the primary sore have been classed under that head. We have been very careful in our endeavours to distinguish the sore that has the hardened edge and base *naturally*, from that which may acquire it by *art*. This can only be done by watching the sore from its very commencement, for there is not the smallest doubt, that a sore can be artificially produced by the application of the *kali purum* to a sound man, which is not to be distinguished from chancre by a person not aware of the circumstance; the hardened edge and base can be perfectly imitated, and the specific distance (as it has been called) of the hardness, can be increased or diminished by the proper management of the caustic.

In primary sores of a complicated nature, the non-mercurial plan has been as strikingly useful as in the more simple. In phymosis with clustering sores on the point of the prepuce, and concealed ulceration of the glans with hardened edges, where no irritating substance has been employed to occasion them, the success has been uniform; the livid chancre of Mr Carmichael (page 26) has been treated with equal success. In fine, every thing I have seen of the practice confirms me in the possibility of healing primary sores on the genitals of whatever description they may be, without the employment of mercury, and I have met with nothing to make me question the propriety of making the trial. Of some hundred cases, none have hitherto resisted; in some of these, it is true, I should never have thought of using mercury; but by far the greater number were of that description, that not only I myself, but practitioners of much greater experience, would not formerly have thought of defer-

* A curious case is given by Vigarous, which occurred in six young Frenchmen, who had had connection successively with the same woman. The 1st and 4th, in the order of connection, had chancres and buboes, the 2d and 3d gonorrhoea, the 5th, chancre, the 6th, bubo. Vigarous, *Euvres de chirurgie-pratique civile et militaire*, Montpellier, 1812. *Complication du vice Venerien*, page 8. I have at present an instance of three individuals similarly circumstanced, the 1st escaped, the 2d had chancres and elevated sores, the 3d had gonorrhoea; the connections took place within an hour.

ring it for a single day. I may, to a certain extent, apply the very same observation to the secondary symptoms that have succeeded the non-mercurial treatment. I have now seen a great variety of them, but I have not yet studied and compared a sufficient number of cases, to enable me to offer such positive testimony to the expediency of abstaining from mercury altogether in this class, as in the former. The facts at present ascertained are these: Secondary symptoms occur more frequently, and appear at an earlier and more determinate period than when mercury has been used; but they in many cases have gone off as soon, never, as has been supposed, proceeding from bad to worse, or from one succession of parts to another in unabated violence; on the contrary, they by no means exhibit the same violent and unrelenting symptoms which we have observed in many instances where mercury has been used; the eruptions have not run into ulceration; they have not formed into large scales or extensive blotches; nor have the bones of the nose or of other parts been in any instance affected with caries. I cannot take upon me to assert, that these events *will not* occasionally take place, but in some hundreds of cases which I have watched with the utmost anxiety, I can aver that *they have not*.

Much remains to be ascertained with regard to the secondary symptoms; but enough has already been proved, to demonstrate that the bounds within which the use of mercury has been confined by Mr Hunter, and by many eminent men since his day, may be still more curtailed, and that we may in a number of these cases, defer, or limit, or altogether omit the employment of that mineral. To the phthisical, to the scrofulous, to the manically disposed, the fact is invaluable. Mr Carmichael, to whom we owe a great deal, for his endeavours to limit the employment of mercury, has well remarked: "If one drachm was found capable of producing the effect, I should not think of administering an additional grain." (page 48.) But all practitioners do not act upon this enlightened principle; a certain number of ounces are supposed necessary for a cure; these are used whether the symptoms have yielded or not, or without ever trying the simple experiment of delay, and although the constitution often sustains the shock, it frequently sinks, and it always is endangered. This is not an imaginary representation; I know that *ounce* daubings have been continued for six, eight, or ten days, within the last five years, by some practitioners high in name; and quantities as great or greater upon the whole, although more minutely divided, have been used by others; but within the same period, as a most refreshing counterbalance, I know that mer-

cury is not employed to a tenth part of its former consumption nor in one half the number of cases, by many ornaments of their profession. With such a disposition as this, and with the additional lights thrown upon the subject by the trials in the military hospitals, I have little doubt that the *real value* of mercury in syphilis will very soon be appreciated. One gentleman, who has contributed a great deal to ascertain the nature of the diseases produced by that substance, has made an observation with which I shall conclude, and which I conceive is worthy of being inscribed in letters of gold on every Lock Hospital in Europe. "It is not the name, nor the doctrine, nor the practice, of Hippocrates, or of Sydenham, of Pott, or of Hunter, which should guide us implicitly; but it is the truth, and the result of actual facts, founded on knowledge, and on reasoning, and on repeated experiments, which can alone establish a course of practice, at once safe and efficacious."—MATHIAS.

I am, Dear Sir, &c.

Queensberry House, May 25th, 1818.

Analytical Return of Venereal Diseases, treated without Mercury, from June 24th to December 25th 1817, in the Military Hospital of Edinburgh Castle, extracted from the Case-Books of the 88th Regiment.

PRIMARY AFFECTIONS.

1st, Description of cases that have been treated.			
A Affections possessing the true Hunterian character, viz.	a Ulcers only,		51
	α Before admission into hospital,	19	
	β After admission into hospital,	1	
	b Buboes succeeding to ulcers, viz.		20
B Affections, of various kinds, not possessing the true Hunterian character, viz.	a Ulcers only,		27
	α Before admission into hospital,	6	
	β After admission into hospital,	1	
	b Buboes succeeding to ulcers, viz.		7
	γ Of which were discussed,	4	
	δ Of which suppurred,	3	
			—34
Total number of primary affections treated,			105

PRIMARY AFFECTIONS. Continued.

2d, Time required for the Cure.

A.—OF ULCERS.

Hunterian.		Non-Hunterian.	
The following number of cases were cured	In the following number of days.	The following number of cases were cured	In the following number of days.
6	5	3	5
7	7	5	7
13	10	5	10
9	14	6	14
14	21	5	21
16	28	7	28
3	40	1	40
3	50	2	85

B.—OF BUBOES ENDING IN RESOLUTION.

Buboes succeeding Hunterian ulcers.		Buboes succeeding non-Hunterian ulcers.	
The following number of cases were cured	In the following number of days.	The following number of cases were cured	In the following number of days.
2	5	1	5
3	14	1	21
5	21	1	30
2	30	1	35
4	45		

C.—OF BUBOES ENDING IN SUPPURATION.

Buboes succeeding Hunterian ulcers.		Buboes succeeding non-Hunterian ulcers.	
The following number of cases were cured	In the following number of days.	The following number of cases were cured	In the following number of days.
1	30	1	75
1	45	1	95
1	50	1	105
1	65		

SECONDARY AFFECTIONS.

1st, Description of Cases treated.

A. Succeeding the Hunterian ulcer.	a Eruptions only.	$\left\{ \begin{array}{l} \alpha \text{ Tubercular} \\ \beta \text{ Exanthematous} \\ \gamma \text{ Pustular} \end{array} \right.$	$\left\{ \begin{array}{l} 4 \\ 3 \\ 1 \end{array} \right.$	9
	b Eruptions combined with sore throat.	$\left\{ \begin{array}{l} \alpha \text{ Tubercular} \\ \beta \text{ Exanthematous} \\ \gamma \text{ Pustular} \end{array} \right.$	$\left\{ \begin{array}{l} 1 \\ 1 \\ 1 \end{array} \right.$	
B. Succeeding ulcers not Hunterian.	a Eruptions only.	$\left\{ \begin{array}{l} \alpha \text{ Tubercular} \\ \beta \text{ Exanthematous} \\ \gamma \text{ Pustular} \end{array} \right.$	$\left\{ \begin{array}{l} 1 \\ 1 \\ 1 \end{array} \right.$	2
	b Eruptions combined with sore throat.	$\left\{ \begin{array}{l} \alpha \text{ Tubercular} \\ \beta \text{ Exanthematous} \\ \gamma \text{ Pustular} \end{array} \right.$	$\left\{ \begin{array}{l} 1 \\ 1 \\ 1 \end{array} \right.$	
Total number of secondary affections				11

2d, Period of Occurrence, and Time required for the Cure.

Description of primary affections to which they succeeded.	Case	Form of eruption.	Period of occurrence after primary affection.	Time required for the cure.
Hunterian,	No. 1	Tubercular.	3 Weeks.	3 Weeks.
	2	Tubercular.	6 Weeks.	10 Days.
	3	Tubercular.	3 Weeks.	6 Weeks.
	4	Tubercular.	5 Months.	14 Days.
	5*	Tubercular.	8 Weeks.	6 Weeks.
	6	Exanthematous.	6 Weeks.	14 Days.
	7	Exanthematous.	1 Week.	8 Days.
	8	Exanthematous.	3 Weeks.	6 Weeks.
	9	Pustular.	3 Weeks.	18 Days.
	10	Tubercular.	1 Month.	5 Weeks.
	11*	Tubercular.	3 Months.	14 Days.

* These were the two cases in which sore throats occurred. The affection of the fauces was of an aphthous appearance, and yielded to astringent gargles in about eight days. In both cases it appeared along with the eruption.

Extracted by JAMES BARTLETT, Assut.-Surg. 88th Regt.

AVERAGE RESULTS OF THE OBSERVATIONS.

Primary Affections.

Number of days required for the cure of	Great-est.	Least.	Average.
71 cases of Hunterian ulcers	50	5	18.97
34 — non-Hunterian ulcers	85	5	20.29
16 succeeding Hunterian ulcers	35	5	22.75
4 — non-Hunterian ulcers	45	5	24.81
4 succeeding Hunterian ulcers	65	30	47.5
3 — non-Hunterian ulcers	105	75	91.67

Secondary Affections.

	No. of cases.	Period of Appearance			Time of Cure.		
		Great-est.	Least.	Ave- rage.	Great-est.	Least.	Ave- rage.
Hunterian tubercular	5	24	3	5 w 5 d	6	10	26
— exanthem.	3	6	4	5 w 2 d	6	8	21
— pustular	1	1	1	3 w.	6	8	18
total	9	24	3	7 w.	6	8	24½
Non-Hunterian tubercular	2	16	12	14 w.	5	14	24½

*Duplicate
vol. 14*

OBSERVATIONS

ON THE

TREATMENT OF SYPHILIS

WITHOUT MERCURY.

BY

JOHN THOMSON, M.D.

PROFESSOR OF SURGERY TO THE ROYAL COLLEGE OF SURGEONS,
EDINBURGH, &c.
AND SURGEON TO THE FORCES.

COMMUNICATED TO DR DUNCAN, JUNIOR.

FROM THE EDINBURGH MEDICAL AND SURGICAL JOURNAL, NO. 53.

EDINBURGH:

PRINTED BY GEORGE RAMSAY AND COMPANY.

1817.

Mr. Thomson on the Cure of Syphilis without Mercury

Average Results of the Operation.

Primary Affections.

Case	Age	Sex	Duration of Disease	Result
1	30	M	10 days	Cured
2	35	M	15 days	Cured
3	40	M	20 days	Cured
4	45	M	25 days	Cured
5	50	M	30 days	Cured
6	55	M	35 days	Cured
7	60	M	40 days	Cured
8	65	M	45 days	Cured
9	70	M	50 days	Cured
10	75	M	55 days	Cured

Secondary Affections.

Case	Age	Sex	Duration of Disease	Result
11	30	M	10 days	Cured
12	35	M	15 days	Cured
13	40	M	20 days	Cured
14	45	M	25 days	Cured
15	50	M	30 days	Cured
16	55	M	35 days	Cured
17	60	M	40 days	Cured
18	65	M	45 days	Cured
19	70	M	50 days	Cured
20	75	M	55 days	Cured

These cases were treated by the use of the following medicine, and the result was as follows:—

The medicine was given in the following manner:—

OBSERVATIONS
ON THE
TREATMENT OF SYPHILIS
WITHOUT MERCURY.

JOHN THOMSON, M.D.
OF THE FACULTY OF PHYSICIAN TO THE ROYAL HOSPITAL OF DUBLIN,
AND PHYSICIAN TO THE ROYAL DISPENSARY.

EDINBURGH:
PRINTED BY JAMES WILKIE, AND SOLD BY
ALL BOOKSELLERS.

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OBSERVATIONS

ON THE

TREATMENT OF SYPHILIS

WITHOUT MERCURY.

DEAR SIR,—I regret that I have been prevented, by various avocations, from fulfilling my promise of giving you an account of the observations which, for a series of years, I have had occasion to make respecting the treatment of syphilis without mercury. But, if the following brief statement of the general results of these observations shall appear to you worthy of a place in your Journal, you will oblige me by inserting it.

I was led, many years ago, by a careful investigation into the history of syphilis, and by having had occasion to see a considerable number of anomalous and untractable cases, treated by full, but ineffectual courses of mercury, to doubt the justness of the opinion so generally received, that mercury, in some one or other of its forms, is the only safe, effectual, and specific remedy for the cure of that disease. These doubts were much increased by the discussions to which the various communications made to the late Dr Beddoes gave rise, respecting the efficacy of nitric acid in venereal complaints; by the appearance of Mr Abernethy's valuable publication on the diseases resembling syphilis; and by

conversations, at different times, with my friend Mr Pearson of the Lock Hospital, as well as by the perusal of notes taken from his excellent lectures upon that subject. In the uncertainty in which I was respecting the proper diagnostic marks of constitutional syphilis, I resolved, in the treatment of those cases that should come under my care, in which mercury had had a full trial, and particularly in which it seemed to have produced injurious effects, to abstain altogether from prescribing that remedy, till a trial should be made of some of the other remedies which had at different times acquired reputation for the cure of venereal complaints. That which I made choice of was the simple decoction of sarsaparilla; and, after a very ample employment of this substance, I feel myself compelled to adopt the opinions of some of the earlier writers on the venereal disease, with regard to the singular efficacy of this root in curing symptoms which have usually been reputed syphilitic; and also, with a few exceptions, to believe in the justness of the conclusions to which the late Sir William Fordyce had been led from an extensive trial of sarsaparilla. I have employed this remedy in every form of the disease, which either remains after, or succeeds to, the use of mercury, and have had the satisfaction to observe all manner of cutaneous eruptions and ulcerations, ulcerations of the throat, pains and swellings of the joints and ligaments, and nodes of the bones, gradually disappear under its mild operation, when its use was duly persisted in, and was, at the same time, accompanied by attention to regimen, and the proper local treatment. In particular cases, the recovery has been tedious, and it has been necessary to have recourse to the use of the sarsaparilla a second, or even a third time. I may however remark, that I have never had occasion to see the venereal diseases in which it was employed make those rapid and alarming advances which we see so often occur in them during the use of mercury, nor am I aware of any permanently injurious effects which the sarsaparilla produces, either immediately, or remotely, upon the constitution.

Various circumstances induce me to believe, that sarsaparilla has formed a principal ingredient in the composition of the greater number of the secret remedies which have been sold in every country of Europe for the cure of syphilis, and which have, I believe, been found chiefly useful in those cases in which that disease has appeared to remain in the constitution after the full and repeated use of mercury. I find the sarsaparilla mentioned as an ingredient in most of the antiveneal prescriptions of the irregular practitioners, and, in particular, in those of Sintelaer, the vender of a secret remedy for the cure of the ven-

real disease, who practised in London about the beginning of the last century, and who appears to me to have anticipated some of the observations and discoveries upon this subject which have been made in our times. In carrying on the observations to which I have alluded, it was with no small satisfaction that I accidentally found, about six years ago, the work of this practitioner, in the library of my friend, Dr Stedman of Kinross, entitled "The Scourge of Venus and Mercury, represented in a treatise of the venereal disease, giving a succinct, but most exact account of the nature, causes, signs, degrees, and symptoms of that dreadful distemper, and the fatal consequences arising from mercurial cures, with the several ways of taking that infection," &c. "Unto which is added, the true way of curing not only the consummate and inveterate, but also the mercurial pox, found to be more dangerous than the pox itself. The whole illustrated by many authentic and unquestionable accounts of cures performed after the patients were reduced to the very brink of the grave by mercurial operations, the like not as yet extant." By J. Sintelaer, practitioner in physic, London, 1709.

That I have not mistaken the nature, nor overrated the value of the hints contained in this book, and which tended to confirm me in the soundness of the conclusions to which I had been previously led regarding the treatment of venereal diseases without mercury, will appear, I trust, from the following extract, selected from among many passages of a similar import.

"When, after the imperfect or preposterous cure of a consummated pox, by mercurial salivations, or sometimes also by over violent, and too frequent mercurial vomitives, there appear such symptoms as are most commonly observed in the most inveterate or radicated pox, you may then rationally conclude, that they are not so much the remnants of the former pox, but rather the symptoms of a disease of its own kind, being occasioned either altogether by the natural malignity and virulency of the mercurial preparations, by which these salivations or violent vomitings were raised, or at least by the intermixture of the mercury with some small remnants of the pocky ferment, which otherwise might either have been expelled or subdued by the strength of nature; but its virulency being now exalted by the malignity of the mercury, it appears attended with much more violent, and much more dangerous symptoms after the mercurial cure, than it did before.

"Hence it is that a certain modern author is forced to confess, that he believes that there are more fallen noses, corroded palates, and rotten bones, occasioned by the mercury, than by the pox.

"So that if you observe, that after the cure of the pox by mercurial medicines, either some fresh pocky symptoms, such as did not appear before, but especially such as make their appearance in the glandulous and bony parts, as ulcers in the mouth and palate, or the roof of the mouth, and violent and continual pain in the bones; I say, if you find these symptoms appear after a cure of the pox by mercury, when nothing of it was observed before; or if you find these, and other such like symptoms which discovered themselves before the said cure, become afterward more violent and frequent, you may then be fully convinced, that they owe their origin chiefly to the malignity of the mercury, or at least to its intermixture with some slight remnants of the old pocky ferment, whence it is, that we have given it the name of a mercurial or symptomatical pox, called by some the *bastard pox*."

In the want of an accurate diagnostic symptom between syphilitic chancre and ordinary ulceration, and often also from the situation of a patient, upon his first applying to me, rendering it improper for him to undergo a course of mercury, I had for many years frequently been induced to treat primary venereal sores with simple local remedies. The great number of ~~these~~ sores which disappeared under this treatment, some with, and others without, the formation of bubo, and many of them possessing all the characters usually attributed to syphilitic chancre, rendered me extremely desirous to ascertain whether there be indeed any primary venereal sores which are not capable of being healed without the use of mercury. An opportunity for bringing this matter to the test of public experiment, has been afforded me in the practice of the Consolidated Depot Hospital in Edinburgh Castle, to the charge of which, through the kindness of the Director General of the Army Medical Department, I was appointed in March 1816. In this hospital, open to the inspection of all the medical military officers attending the University, I have, since that period, carefully abstained from the employment of mercury, not only in the treatment of secondary, but also in that of the primary symptoms of syphilis, and have found that chancre and bubo have in every instance disappeared under an antiphlogistic regimen, rest in the horizontal position, and mild local applications, as speedily as I had ever seen them disappear in similar cases in which mercury was employed. In the management of these cases, I have had the able assistance of Hospital-Mate Macgibbon, and of Assistant Staff-Surgeon Blackadder.

The mild manner in which both chancres and suppurating buboes were observed to heal under this treatment in the Depot Hos-

pital, induced the late Mr Hicks to follow a similar practice in the treatment of the men affected with syphilis of the 92d regiment, at that time stationed in Edinburgh Castle. The results which this gentleman obtained in the cases so treated, and which I had an opportunity of seeing until the regiment marched for Ireland, in April 1817, were precisely similar to those which I had obtained in the Depot Hospital.

In the course of reporting the cases in these hospitals for my clinical lectures on military medicine, I was surprised to be informed, in February 1817, by Mr Kenning, resident surgeon of the Ordnance Medical Department, that a practice similar to that which I was following in syphilitic cases had been employed for a considerable period (I have reason to believe even some time previously to my appointment to the Depot Hospital) by Mr Rose, surgeon of the Coldstream Guards, and I was happy to learn, that the results of his practice were similar to mine.

Soon after this period, the 88th regiment arriving here from France to replace the 92d, I found, that, in consequence of communications from London, the medical officers of this regiment had begun a short time before to treat all their syphilitic cases without mercury; and since that time, up to the present date, I have had an opportunity of seeing a very great number of syphilitic cases in this regiment treated in this manner, with uniform success, under the judicious management of Surgeon Johnston, and Assistant Surgeon Bartlett.

In private practice, I have followed a similar mode of treatment in a great number of syphilitic cases, many of which were seen by my friend Mr Turner, who for several years lived with me, and assisted me in my practice; and in treating these cases, I have obtained results in all respects similar to those stated to have taken place in the military hospitals.

Bubo in one or both groins, sometimes suppurating, and in other instances disappearing by resolution, has occurred in about one fourth of those affected with chancre, but in none of the chancres or buboes which I have seen treated without mercury, has any disposition to gangrenous inflammation, or to phagedenic ulceration, ever manifested itself,—occurrences which are so common in the treatment of these affections, under even the most careful employment of mercury. In a number of the cases of chancre, a hard tubercle, accompanied with discoloration of the skin, has been observed to remain for a considerable time after cicatrization, and this part has frequently shewn a disposition to become ulcerated, when it has either been neglected or has been irritated.

A sufficient length of time has not yet elapsed to enable us to ascertain in how many cases constitutional affections will occur, or what all the constitutional affections may be among those who have been cured of the primary symptoms of syphilis without the use of mercury. Of the cases which I have seen, the number in which constitutional symptoms have supervened, has not exceeded one in ten; and the only forms of these symptoms which have presented themselves, are ulcerations of the throat, and cutaneous eruptions, sometimes accompanied by inflammation of the eyes. The ulcerations of the throat have been few in number, and generally accompanied with cutaneous eruption; they have had an aphthous appearance, and have sometimes been attended with aphthae of the inside of the mouth, enlargement of the tonsils, and swelling of the lymphatic glands of the neck. The cutaneous affections which have occurred have been, in several cases, a reddish mottled efflorescence of the skin, resembling roseola, in others, papular, pustular, scaly, or tubercular eruptions. These secondary symptoms have usually appeared in cases where the primary sores had been long in healing, and where they had left behind them indurated cicatrices. The time at which they have generally occurred, has varied from four to twelve weeks after the appearance of the primary ulcer. The affections of the throat have been slight in comparison with those which usually take place in venereal cases after the use of mercury. The cutaneous eruptions have been chronic in their nature, and have all, as well as the sore throats and inflammations of the eye, gradually, though sometimes slowly, disappeared without the use of mercury, and without seeming to have left any injurious effects behind them. I am inclined to believe, that, if mercury had been employed, the cutaneous affections, in several of these cases, might have been cured in a shorter period of time than that in which they have disappeared; but whether, in accelerating the cure of the cutaneous eruption, that remedy might not have excited other constitutional affections, is a point which future experience can alone determine.

The secondary symptoms of syphilis, I may remark, have not appeared to me to be more frequent in their occurrence in those patients who have been treated without mercury, than in those by whom that remedy has been freely employed. Hitherto I have had no opportunity of observing among patients treated for the primary symptoms without mercury, any of those deep or foul ulcers of the skin, of the throat, of the mouth and nose, or of the painful affections of the bones, which are stated by every writer on syphilis, as the genuine products of that disease. Among the very great number of such affections which have

presented themselves to my observation, one, or more frequently more than one, course of mercury had been employed.

The results I have now stated to you are satisfactory, I conceive, in so far as they seem to establish the possibility of every symptom of syphilis being cured without the use of mercury, and by this to lead to applications of the utmost importance in practice.

They also have a confirmation in, while they enable us to explain, the numerous, and apparently contradictory, statements which have at different times been given with regard to the efficacy of the various remedies which have been extolled for the cure of syphilis, from the first appearance of that disease in Europe to the present day.

Indeed, all the observations which I have had an opportunity of making upon the symptoms and progress of syphilis, tend to confirm me in an opinion which I have for several years taught in my lectures, that it is a chronic and not an acute disease; and that the rapid progress which it seems sometimes to make, and the exasperated symptoms which it exhibits, are not the genuine or necessary effects of syphilis, but may, in most instances, be traced to intemperance, to neglect, or to improper treatment.

What then, it may be asked, is the practical conclusion to which these views lead in the treatment of syphilis? Are we to abandon the use of mercury,—to reject it as a remedy which is unnecessary, and that may be injurious; and if mercury be laid aside, must we employ other remedies, such as guaiacum, sarsaparilla, or nitric acid, in its place; or may we safely trust the cure of this disease to the powers of nature alone?

Many years, I conceive, must elapse, before a satisfactory answer can be given to these questions. To be able to answer them, it must be ascertained, whether syphilis undergoes a spontaneous cure in all the forms in which it appears; and upon this being established, it must be also ascertained, whether by any, and by what means of treatment, the progress of this spontaneous cure may be accelerated or retarded.

The effect of mercury in accelerating the cure of syphilis seems to be too well established to admit of its being called in question; but in how far the use of this substance may or may not give a tendency to the recurrence of the disease in a more aggravated form, or may induce diseases different from, but resembling those described as arising from syphilis, are points still far from being sufficiently determined. The belief that syphilis can be cured safely and ultimately only by the use of mercury, is so deeply rooted in the minds of the public, and the prejudices of practitioners, are so much biased in favour of the em-

ployment of that remedy for the cure of syphilis, that we cannot expect that its use, whether it shall be ultimately found to be necessary or not, will be generally given up, at least for a long time to come, in the private practice of our profession.

The practice however of treating venereal cases without the use of mercury, has now become very general in the British military hospitals, both at home and in France; and by a communication which I have had the pleasure to receive, at the desire of Sir James McGrigor, from my friend Dr Theodore Gordon, I have reason to believe, that the results obtained do not differ materially from those which I have described. These results will soon, I hope, be communicated to the public; and much valuable information may be expected from the medical officers of the army who have devoted their attention to this subject, and whose situation affords them so much better opportunities than medical practitioners enjoy in the practice of civil life, of ascertaining whatever relates to the natural history or treatment of syphilis.

The following table of the cases which have been treated without mercury in the military hospitals here, since March 1816, exhibits a summary view of some of the results which have been detailed. I remain,

Dear Sir,

Very truly your's,

JOHN THOMSON, M. D.

5, George Street, }
8th December 1817. }

Abstract of the cases of Primary Venereal Symptoms treated without the use of Mercury in the Consolidated Depot Hospital, and in the Regimental Hospitals of the 92d and 88th Regiments in Edinburgh Castle, from March 1816 to December 1817.

Number of cases of primary symptoms treated,	155
Of these had buboes, a considerable proportion of which suppurated,	54
All cured.	
Of these cases, secondary symptoms have supervened in	14
In the form of ulceration of the throat in	1
of ulceration of the throat with cutaneous eruption in	2
of cutaneous eruptions alone in	10
of cutaneous eruption with iritis in	1*
All of which have disappeared.	

* In seven other cases of eruption, attended with iritis, which have occurred to my observation, the disease has been cured without the use of mercury.
J. T.

*For Sir James McGrigor
from the author*

*Reprinted
Vol. 14*

SOME

OBSERVATIONS

ON THE

VARIOLOID DISEASE,

WHICH HAS LATELY PREVAILED IN EDINBURGH,

AND ON THE IDENTITY OF

CHICKEN-POX AND MODIFIED SMALL-POX,

IN A LETTER ADDRESSED TO DR DUNCAN, JUNIOR.

By JOHN THOMSON, M. D. F. R. S. E.

CONSULTING PHYSICIAN TO THE EDINBURGH NEW-TOWN DISPENSARY,
PROFESSOR OF SURGERY TO THE ROYAL COLLEGE OF SURGEONS,
REGIUS PROFESSOR OF MILITARY SURGERY IN THE UNIVERSITY,
AND SURGEON TO THE FORCES.

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

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OBSERVATIONS, &c.

DEAR SIR,—I beg leave to communicate to you the results of some observations which I have had occasion to make in attending to the progress of the eruptive varioloid disease that has lately prevailed in Edinburgh, and of the occurrence of which, in the Military Hospitals, my friend Mr Hennen has given so accurate and interesting an account in the present number of your Journal.

My attention was first called in a particular manner to this disease by the cases of it which occurred in the Depot Hospital, and by the cases in the Castle, produced by inoculation, with the matter taken from Mr Hennen's son. Since that period I have seen in various parts of the town seventy-two cases of this eruption, including those which have been detailed by Mr Hennen. Of this number eight have had the disease after having passed through the small-pox, twenty-seven after having had the cow-pock, two have had the disease co-existent with cow-pock, and thirty-five, including the six children who were inoculated in the Castle, had not passed through either small-pox or cow-pock. Three of the children affected with this disease after cow-pock had previously passed through an eruption of the same sort, and in one of these, I have had the best opportunity to observe, that the disease has each time exhibited the appearances which have been supposed to be characteristic of chicken-pox.

The greater part of those affected with this disease, who came first under my notice, had previously passed through either

small-pox or cow-pock, or had had the disease communicated to them by inoculation. In watching the appearances and progress of the eruption in these persons, I was for a considerable time inclined to regard it as chicken-pox, till having an opportunity of observing its severity and fatality in those who had not undergone small-pox or cow-pock, I was compelled to abandon that idea, and to believe that in all the different forms under which this eruption has appeared, it could be no other than the small-pox.

This epidemic has attacked three different classes of persons, *1st*, Those who had passed through small pox; *2dly*, Those who had had cow-pock; and, *3dly*, Those who had had neither small-pox nor cow-pock, and in all of these it has appeared to possess some common characters. It has usually commenced in a vesicular form, or in a papular speedily becoming vesicular, and has become pustular only in some cases in its progress. The pustules have appeared sometimes with, and sometimes without a central depression. The eruption has been irregular in size and form, as well as in the place of its first appearance, and in most instances it has appeared to occupy only the surface of the skin. It has in almost all instances come out in successive crops, some of which have appeared on the body after the eruption was at the height on the face. It has in general appeared even in severe cases to have arrived at the height on the face by the 6th day of the eruption, and in the milder not unfrequently by the 4th or 5th day. The fluid contained in the vesicles and pustules has in a great number of instances appeared to be lymph rather than pus, even to a late period of the disease, and has generally dried into horny scabs covering tubercular elevations of the skin, which, in several instances, have been followed by pits or depressions of that texture. In the decline of the eruption, vesications upon an inflamed basis of a greater or less extent, have frequently appeared upon the extremities, generally filled with lymph, but in a few instances with air; and, in some instances, small abscesses have formed in the subcutaneous texture. This eruption has rarely had any of the smell peculiar to small-pox. It has produced but very little temporary blindness, and has seldom been accompanied by the symptoms of secondary fever.

In four of the eight patients who had had small-pox, this epidemic has appeared in a highly aggravated and somewhat malignant form. Comparatively but few, I believe, have ever recovered of primary natural small-pox who have had them in number and form similar to those described in Nos. 12, 13, and 14, of Mr Hennen's cases. The disease in his 4th case,

though severe, could not be said to be malignant, and in the other three instances it has been so mild, and of so short duration, that, had these cases occurred before the vaccine inoculation was known, no practitioner of experience would, I am convinced, have hesitated in pronouncing them to be distinct and unequivocal cases of chicken-pox.

Of the twenty-nine patients who had undergone cow-pock inoculation, no one has died, and three only have had the disease in a very severe form. In by far the greater part of this class, the eruption has been papular or vesicular, without becoming distinctly pustular, and when it has become so, the pustules have appeared chiefly on the face, while the disease has remained vesicular on the rest of the body. In some of these cases the eruption has been at the height by the third, in others by the fourth, in most by the fifth, and in the severer by the sixth or seventh day. I have not been able to discover in the appearances, progress, or termination of the disease, as it has occurred in those who had been vaccinated, any symptoms by which I could distinguish it from the three varieties of chicken-pox described by Dr Willan, or from the numerous cases of that disease which I had seen before, and since the practice of vaccination has been introduced.

Of the twenty-nine patients who have had this disease in the natural way, without having previously passed through cow-pock or small-pox, nine have died. In five of these fatal cases the disease was of the kind which has been so well described by Dr Rogers of Cork, and by the late Dr Walker of this place, under the name of malignant crystalline or water-pox. In two of these, petechiae or livid spots made their appearance before death; three died on the 6th, and two on the 8th, day of the eruption. In the other four cases, the disease was pustular and confluent, one died on the 9th, two on the 12th, and one on the 18th day.

In thirteen of those twenty-nine cases, the disease, though it has not proved fatal, has been more or less severe. In several, particularly in adults, it had from the first the appearances which are usually described as characteristic of genuine small-pox, sometimes of the distinct, and at other times of the confluent kind. In others, the disease had at first the appearance of aggravated chicken-pox, rather than of small pox, the eruption coming out in successive crops, and being chiefly vesicular in its first stages, and becoming only pustular in its progress. In very few of the severer cases have there been any symptoms of secondary fever, and these have been mild and of short duration.

In the remaining seven cases the disease was remarkably

mild, so much so as to resemble chicken-pox, or the inoculated rather than the natural small-pox. In these there was comparatively but very little eruptive fever, and in three or four instances the disease seemed to be at the height by the fourth or fifth day. Had not these cases occurred in situations where the malignant small-pox existed, I should not have been disposed, from the appearances which manifested themselves, to believe that they could have originated from the infection of genuine small-pox.

The history of the progress of this contagion in the military hospitals has been so fully and circumstantially related by Mr Hennen, as to render it quite unnecessary for me to enter upon it. I shall only remark, that there seems no reason to doubt, that all the cases of mild and malignant small-pox which have occurred in the Castle, were derived from matter taken from Mr Hennen's son. He and his brother appeared to have caught the disease from Sergeant Williamson's son, and this boy again from the patient Wright in the Depot Hospital, who passed through a disease which was regarded as distinct and mild chicken-pox. I may add, that, in one of Mr Hennen's children, the disease was so mild as to escape almost unobserved; and in the other, from whom the matter was taken for inoculation, though the constitutional symptoms were at first severe, the eruption appeared to me to afford, in every step of its progress, one of the best marked cases of chicken-pox which had ever come under my observation.

Though in other parts of the town it has been more difficult to trace accurately the progress of the contagion of this epidemic, yet, in several situations, the mild and malignant form of the disease have appeared evidently to produce each other. This was particularly obvious in two situations where the disease prevailed extensively, in the different floors of a tenement on the Castle Bank, and in those of another tenement on St Leonard's Hill. From the fatality of the disease in these two situations among the children who had not been vaccinated, and its aggravated form even in some of those who had been vaccinated, no room was left for doubt that the disease was malignant small-pox, though in both situations several children passed through it in a form so mild and so accurately resembling chicken-pox as, in my opinion, not to be distinguishable from that disease. I have been informed of the mild form of the disease producing the malignant in unvaccinated persons in three other places of the town besides those I have mentioned, and that too in families in the better condition of life. I hope the different medical practitioners who have witnessed the oc-

currence of this important fact, will be induced to communicate to the public an account of the circumstances in which they respectively saw it occur.

It was my having seen the disease at first only in its mild form, and among those who had had small-pox or cow-pock, that induced me to believe, for a long time, that even the aggravated cases which presented themselves to my observation, could only be cases of chicken-pox; and I was the more disposed to take this view of it, that I had formed a similar judgment with regard to an epidemical eruptive disease, which I saw prevailing extensively in the villages of Colinton, Slateford, and Currie, during the year 1809. The present epidemic appeared to me to resemble in every particular that which I then had occasion to see, and which, from a careful comparison of its symptoms in the milder cases, with Dr Willan's description of chicken-pox, I had concluded to be that disease. I was the more confirmed in my belief of these epidemics being chicken-pox, from my observing at both periods two symptoms occur in several patients which have been regarded by Dr Willan and others as diagnostic of chicken-pox. I allude to the succession in the crops of the eruption, and the formation of vesications of greater or less extent, resembling those made by scalding water, occurring among, or in the interstices of the eruption, and producing the appearance which has been termed by some the *szine-pox*, and which, in treating of the diseases of the skin, I have been in the use of pointing out to my pupils as marks by which, in doubtful cases of small-pox or chicken-pox, they might determine the true nature of the disease. I mention this circumstance with a view to show the reluctance and difficulty which I have had in adopting the conclusions that have forced themselves upon my mind, and which I shall now briefly state to you.

1st, I have been convinced, by the varieties which have appeared in the form of this epidemic in the different individuals whom it has attacked, that the descriptions which have been given of the appearances and progress of the eruption in small-pox by our best systematic authors, are, in many respects, imperfect; that the diagnostic marks which have been pointed out between small-pox and the disease that has been termed chicken-pox, are not to be relied upon; and that no applicable marks of distinction between modified small-pox and chicken-pox have hitherto been established. My observation would lead me to believe, that the eruption which succeeds to cow-pock, has more of a vesicular or variceloid appearance in infants, than it has in adults, while, in these again, it shows a disposition to become pustular, and exhibits more of the characters of small-pox.

2dly, It appears from the records of medicine, that the same person may have small pox twice, (if not oftener,) during life; and the number of cases of this which have lately occurred in so short a time in Edinburgh, and in so limited a number of patients, seems to me to warrant the conclusion, that this must have been a much more common event than has usually been imagined. It is an event which, I conceive, must have occurred frequently, though its occurrence is denied by some, and comparatively but few instances of it are recorded, even by those who believed in its possibility.

3dly, It has been, I conceive, incontrovertibly established by Dr Jenner and his followers, that cow-pock has the property of rendering those who have passed through it, much less susceptible of small pox infection than they were before; and, besides this, that it possesses also the invaluable property of modifying the small pox in those who receive them, and of converting them, from the most fatal of all diseases, to one scarcely, if at all fatal. A sufficient number of observations have not yet been collected to prove satisfactorily, that this last property is possessed in an equal degree by the small pox, though it seems probable from some, but not all of those cases of secondary small pox which have been recorded, as well as from the result of some of the cases of this kind which have occurred in Edinburgh, that small pox also possess a similar property.

4thly, By admitting that small pox possess this modifying property, it will follow, that, in the instances in which they exerted this influence previously to the discovery of cow pock, they must have produced a mild and less fatal species of small pox, but a species which has not been recognized or pointed out as differing from primary natural small pox by any author with whose writings I am acquainted. It seems, therefore, probable, that this secondary small pox, which we have now so much reason to believe was of frequent occurrence, must have formed a considerable portion of the varioloid eruptions that were formerly denominated the spurious small pox, and afterwards by some the chicken pox. On the supposition that cow-pock preserves from the infection of small pox in an equal degree with small pox themselves (and I am not aware of any facts which tend to prove the contrary,) it will follow that the twenty-seven individuals whom I have mentioned as having had the varioloid disease after cow pock, would, if they had had small pox instead of cow pock, have become affected with small pox a second time, on being exposed to the contagion of this disease, and that too in a form which, previously to the discovery of the cow-pock, must have appeared to practitioners as spurious small pox or

chicken-pox. In this case it is evident that thirty-five of sixty-four of the patients who took the varioloid disease in the natural way, would have passed twice through small pox.

5thly, After Dr Heberden had distinguished chicken-pox from small pox, and had convinced himself and the medical world, that these diseases arise from two contagious poisons, specifically distinct from each other, it seems probable, that the cases of modified secondary small pox which may have occurred, must have been described as cases of chicken-pox, since we nowhere find any hint of the possible co-existence of these two diseases, or of the danger in which medical practitioners are of confounding them together, and also, since we find authors of so great authority as Dr Monro *Prius*, and Dr Heberden, affirming that small pox after small pox is an event of rare occurrence. The former says, "My correspondents almost all agree with me in affirming, that they never saw any attacked by true small pox after they had the true kind, whether communicated by art or by nature;" and the latter, "It would be no extravagant assertion to say, that here, in England, not above one in ten thousand patients is pretended to have had it twice, and wherever it is pretended, it will always be as likely that the persons about the patient were mistaken, and supposed that to be the small pox, which was an eruption of a different nature, as that there was such an extraordinary exception to what we are sure is so general a law."

It therefore appears to me, 6thly, That it now remains to be investigated, in what proportion of the cases, which have been denominated chicken-pox, it is probable the disease has been secondary modified small pox; and, upon the supposition of these being two distinct diseases, by what marks we are in future to distinguish them from each other. I can only repeat, that, in a great proportion of the cases of small pox which have occurred to my observation after small pox, as well as in those cases that had been modified by previous cow-pock inoculation, I have not been able to distinguish them from chicken pox, but have found every symptom in them to correspond most accurately with the descriptions of the varieties of chicken pox, which have been given by Heberden, Willan, Bateman, and others. I am, therefore, satisfied, that previously to the discovery of the cow-pock, secondary small pox being a disease frequent in its occurrence, must have stood in nearly the same relation to primary small pox, that modified small pox now stand in to cow-pock; and my present impression is, that it may be, that chicken-pox and modified small pox are one and the same disease.

I am not aware of any accurate or extensive series of observa-

tions which contradict this hypothesis, nor do I think it can well be set aside, till it shall be proved that chicken-pox occur generally in persons who have not passed through cow-pock or small-pox, and prevail epidemically without cases of small-pox appearing among them; but of this I find no unequivocal example in the past records of medicine. There are upon record, it is true, many cases in which the spurious or chicken-pox are said to have preceded small-pox, and others in which the chicken-pox are said to have intervened between the cow-pock and the modified small-pox. Before, however, admitting that in the production of these cases, there operated two poisons specifically different, it will be necessary to be assured, that the appearances exhibited by chicken-pox cannot be produced by the contagion of primary small-pox, and *vice versa*, as well as, that the contagion of small-pox cannot produce an eruptive disease twice in those who have undergone cow-pock inoculation.

It will be necessary also to ascertain, whether those who have passed through small-pox in its milder form, are equally secure against a second attack of small-pox, as those who have passed through the disease in its more regular and severe form. For if it shall be found that those who have passed through the mild sorts of small-pox are less secure against a second attack, than those who have passed through the severe, it will then be rendered probable, that many of the cases which have been considered as cases of chicken-pox, preceding small-pox, were in fact only cases of mild small-pox, similar to some of those which have been produced by the present epidemic, in individuals who had neither passed through cow-pock nor small-pox, and which exhibited in their appearance the characters that Dr Heberden has assigned to chicken-pox.

Can it be that the hypothesis of the contagion of chicken-pox being specifically different from that of small-pox, has been had recourse to, in order to explain those cases of secondary small-pox which may have occurred after variolous inoculation, and in the benevolent wish of vindicating that practice from the aspersions of its being inefficacious?

7thly, It seems to me certain, that the epidemical disease which has of late prevailed in Edinburgh, is the same with those varioloid diseases which, since the introduction of cow-pock inoculation, have been observed in many places of this and other countries, and which have been by some medical practitioners regarded as small-pox, and by others as chicken-pox. Of this kind, I conceive, was the disease which Mr Brown of Musselburgh has described, as occurring in forty-eight individuals after cow-pock inoculation. This author has omitted to mention the period at which the

eruption was at the height in ten of his patients, but in the remaining thirty eight, it deserves to be remarked, that the eruption was in five of them at the height by the 3d day; in two by the 4th; in twelve by the 5th; in seven by the 6th; in nine by the 7th; and in three by the 8th day; and that no instance is recorded of death having occurred in any of these patients. Though Mr Brown's statement was made for the purpose of throwing discredit upon the efficacy of cow-pock inoculation, the salutary powers of that practice in modifying small-pox, seem to me to be established by his cases, beyond all possibility of doubt or cavil. I can have no doubt also, that this is the disease, concerning which the medical practitioners of Forfarshire published a short Report in 1813, and of which Dr Adams has given a more minute detail in his Inaugural Thesis, printed here in 1814. This gentleman mentions, in p. 42, that this disease, which the medical men of Forfarshire have concurred in denominating small-pox, had occurred in five or six individuals, who had formerly passed through that disease. The efficacy of the cow-pock in modifying the small-pox, is proved by the testimony of the medical practitioners, as to the mildness of the disease in those who had been vaccinated; and also by the fact, that no patient who appeared to have been properly vaccinated, died of it. The very interesting account given by Dr Dewar, of the eruptive disease which has appeared lately in Fife, contains many proofs, that the disease which he describes is the same with that which at present exists in Edinburgh. Of seventy cases attacked with this eruption, fifty-four had been vaccinated, and of these, one child who had been long in bad health, died. Of sixteen who had not been vaccinated, four died, a proportion wonderfully near, though somewhat less than that of the mortality which has occurred in Edinburgh.

Lastly, It seems to me, that the hypothesis which I have thrown out, if it shall be confirmed by future experience, will afford a satisfactory explanation of the nature of those varioloid diseases which have of late years been observed to succeed to the practice of cow-pock inoculation, and will, at the same time, reconcile the various and discordant opinions which have been entertained by medical practitioners, respecting these diseases.

I shall only add, that I feel no anxiety about the fate of this hypothesis, any farther than that it may tend to promote investigation, in the important subject to which it relates, and to defend the most valuable of all modern discoveries, in the only point in which it can now be supposed to be vulnerable.

A friend, in whose judgment and experience I place the greatest confidence, has been pleased to express himself to me

in the following terms: "The opinion suggested by you, that these diseases may all owe their origin to one and the same contagion, if true, would close up much debateable ground—connect and explain many anomalies—simplify our future inquiries—and place beyond any doubt the supremacy of vaccination, as a prophylactic of regular small-pox. Although the opinion suggested does still appear to me very doubtful, I think you will do quite right to publish your observations at once, and in the way you proposed. This will re-agitate a most important pathological question, and elicit from others, interesting information on many yet doubtful points in the history of those diseases. Though doubtful, however, I am far from thinking your opinion fanciful or unfounded; on the contrary, I could furnish some hints rather favourable to its probability."

Before concluding these observations, permit me to avail myself of this opportunity, to return my best thanks to my friends, Drs MacLagan, Moncrieff, Tweedie, and Bartlett, and to Messrs Johnston, Shetky, White, and Thomson, for the opportunities which they have afforded me of seeing the patients affected with this disease under their care; and permit me at the same time to say, that I should feel myself particularly obliged to any of your readers who take an interest in this subject, by their communicating, through the medium of your Journal, or by letter, addressed directly to myself, any facts which may have occurred in their practice, tending either to confirm or to refute the hypothesis, that small-pox, chicken-pox, and modified small-pox, all proceed from one and the same contagion. I remain, dear Sir, yours, &c.

5, George Street, }
15th September 1818. }

JOHN THOMSON, M. D.

THE COMING OF THE SWALLOW.

The curious Naturalist is again invited, by the approaching spring, to note down, in different parts of the globe, the first arrival of migratory fowls, particularly the Swallow: the author suspects they will be late and scarce this present year. The interest which, from printed records, seems to have been taken in the question, Whither goeth the Swallow in winter? would scarcely be credited, were it not proved by the numberless documents left in print on this subject. But to me it appears there is no way of solving it better, than by noting down carefully their first coming in different latitudes*. Linnæus proposed, also, a comparison of the arrival and departure of Swallows, with the spring and fall of the tree leaves, and the periods of flowers.

P. S. I have received a curious paper, entitled, *Voraussicht der Beschaffenheit des jeden künftigen Winters*; by Professor Drittmann, Berlin, 1819; which is worthy the perusal of the lovers of the prognosticative meteorology.

[This Journal is to be continued in the neighbourhood of Tunbridge Wells.]

PART II.

GENERAL REVIEW

OF

MEDICAL LITERATURE,

FROM JULY 1819, TO JANUARY 1820.

[Continued from page 141.]

[In our last Number we introduced, under the head of "General Review," a critique on the recently published work of Professor Thomson; and in that Article we proposed to continue the important inquiry respecting the preventive efficacy and general merits of Vaccination, in the present Number, by an especial notice of a Paper of Sir GILBERT BLAKE; that engagement we now, therefore, hasten to fulfil.]

* See Observations on the Brumal Retreat of Swallows. Sixth Edition. London, 1817.

A Statement of Facts, tending to establish an Estimate of the true Value and present State of Vaccination. By Sir GILBERT BLANE, Bart. M.D., F.R.S., Physician in Ordinary to the Prince Regent.

(From the *Medico-Chirurgical Transactions*, Vol. X. Part 2. Read November 10, 1819, pp. 24.

VACCINATION.

WE have selected this paper from among the Transactions of the Medical and Chirurgical Society, for minute analysis; because, in its title at least, it goes exactly to that point, which, of all others, we think it is of importance, at the present moment, to press upon the attention of our readers. Cases of fever, attended with pustular eruptions, succeeding vaccination, are now become so common in London, that they have probably been witnessed by every Practitioner; yet few, perhaps, would like to hazard a decisive opinion regarding the precise nature of the disease. The world in general are ready enough to believe that it is the small-pox; and many circumstances concur, to give countenance to this supposition. The anxiety of the public upon this question is so great and so general, that it must be fairly met by the Profession; and the sooner they can agree about it, the better, we think, will it be for all parties. The confidence of the public in their medical advisers contributed, in a most essential degree, to the general introduction of vaccination in this country; for they found them uniform in their recommendation of it. It becomes therefore, in a manner, a duty incumbent upon us, to examine rigidly and impartially, whether the grounds upon which vaccination stands are still secure, and what new lights have been thrown upon the subject by the lapse of time and the unexampled extension of the practice. The public, it is clear, will be better satisfied, by seeing that the Profession continue to direct their attention to so important a point; and their confidence in vaccination can *alone* be maintained, by the assurance, that the deeper the subject is investigated, and the wider the range that is taken of it, the greater is the confidence with which we can come forward to recommend it. It required but little discernment to perceive, that medical men, in their early, vigorous, and benevolent recommendations of vaccination, were guided, in a great measure, by speculative reasoning. Their *experience* of its efficacy was, necessarily, bounded by very narrow limits; and though no analogical argument could lead them to believe that the influence of the preventive

might cease in the course of years, yet still such an event must have been allowed to be within the verge of possibility. From what we have ourselves observed, we think we are authorized in saying, that the medical history of the vaccine disease is not yet perfect; that twenty years more may perhaps go by, before we can venture to say that we are acquainted with all its peculiarities; and that, therefore, a continued attention to its progress, and a strict inquiry into all its anomalies, is indispensably requisite, both as a matter of science, and as a matter which involves the quiet of mind, if not the lives of thousands.

It was under this persuasion, that in our last Number we laid before our readers a brief outline of the opinions entertained by Dr. Thomson, of Edinburgh, and by some of the best Practitioners in that part of the island, on the subject of the varioloid epidemic. It was our object, at that time, to give a general view of the varioloid question, in order to prepare our readers for some of the details which we might afterwards find it necessary to lay before them. Our inquiries were then directed more particularly to the question of the identity of small-pox and chicken-pox. This, we remarked, was a question of minor importance to that which now occupies the public mind, at least in this town; viz. whether the failures of vaccination are sufficiently well marked and numerous, to lessen, in any considerable degree, the value of the discovery of cow-pox; and if in any, to what degree? These are important questions, and we think Sir Gilbert Blane has done much good, by directing the attention of the Profession to them in so pointed a manner; and that too in a volume which deservedly enjoys a very extensive circulation.

Indeed we must say, that Sir Gilbert Blane is always to be found where the public can be benefited; and though we may presume to differ from him on certain speculative points, we can have no hesitation in asserting, that this paper adds another to the many obligations which the Profession and the world at large lie under to his talent and persevering research.

The result of the experience of a man who has seen the rise of vaccination, and who has watched its progress with that accuracy which distinguishes Sir Gilbert Blane, must, of course, be highly valuable; and when it goes to the support of all that the most zealous advocates of the practice contended for twenty years ago, it must be highly gratifying to the philanthropist. Whatever we may presently have to say to this, we are at least ready to admit, that there prevails throughout the paper an air of good sense; and that a high

commanding tone, arising from the firm persuasion of the goodness of the cause which he supports, is taken up, with regard to vaccination, which is very pleasing. We must not omit to add, either, as a great merit in this paper, that there is no unnecessary parade about it. It occupies but twenty-four out of a hundred and ninety pages; and when we look to the present fashion, both of writing books, and papers intended for the transactions of learned societies, we shall find more merit in this little circumstance than is perhaps at first sight apparent.

Sir Gilbert Blane's paper is chiefly occupied with a series of calculations founded on the bills of mortality, and intended to show the extent of benefit which has accrued to the world from the introduction of vaccination. For this purpose four periods, each of fifteen years, are selected; and the mortality by small-pox, as compared with the total mortality in each period, is exhibited in the form of Tables. The first includes the fifteen years immediately preceding the introduction of inoculation, that is, from 1706 to 1720, both inclusive. Any objection which might be taken against the accuracy of these bills, in regard to the discrimination of diseases, is certainly, as the author observes, less applicable to small-pox than any other disorder; its character being so striking, as not to be mistaken by the most ignorant and careless observer.

The second series is taken at the middle of the last century, when inoculation had made considerable progress; that is, from 1745 to 1759, both included. In comparing this with the preceding series, it ought to be taken into account, that eleven parishes were added to the bills of mortality between the years 1726 and 1745.

The third series comprises the fifteen years previous to the introduction of vaccination, when inoculation had made still greater progress; that is, from 1785 to 1798, both included.

The fourth series comprises the time in which the vaccine inoculation has been so far diffused as to produce a notable effect on the mortality of small-pox; that is, from 1804 to 1818, both included.

The result of these computations stands as follows:

	Total Mortality.	Mortality by Small-pox.
1st period -	350,503	27,552
2d period -	332,826	29,895
3d period -	293,350	26,579
4th period -	297,404	14,716

*Ratio of the Mortality of Small-Pox to the total Mortality.

From 1706 to 1720, one in 12.7; that is, 78 in 1000.

From 1745 to 1759, one in 11.2; that is, 89 in 1000.

From 1785 to 1798, one in 10.6; that is, 94 in 1000.

From 1805 to 1818, one in 18.9; that is, 53 in 1000.

From these tables it appears, that the proportion of deaths from small-pox to the total mortality increased in the course of the last century; so that inoculation seems to have added to it, possibly by opening fresh sources to the diffusion of its virus; but the author is not inclined to lay so much stress on this circumstance as has generally been alleged. Some allowance must be made for the diminution of general mortality, in relation to the population, which took place during that period, and for the increase of population in that part of the metropolis included in the bills of mortality; but neither of these circumstances seems to affect the general result to any considerable extent. It further appears, that since the introduction of vaccination into general use, there has been a clear and undeniable diminution of mortality by small-pox, the number of deaths in the last series not much exceeding one half of what they had been in similar periods of the middle and latter end of the last century. This is certainly a very satisfactory statement; but it must be confessed that it is but a melancholy sort of satisfaction, to think that 14,000 persons died of small-pox in London in fifteen years, previous to which the disease had been completely extirpated, or rendered harmless, in the populous cities of Vienna and Copenhagen. It is curious to observe, that the deaths by small-pox, which in 1817 had mounted so high as 1051, fell, during the year 1818, lower than they ever have been known since the institution of the bills of mortality; the total number being only 421.

We think these calculations interesting; and we have no doubt that something may be done by them, towards establishing what Sir Gilbert Blane as well as we ourselves is in search of—an estimate of the value and present state of vaccination; but we cannot think they go far in this point of view. They point out to us, indeed, the comparative mortality from small-pox; but they give us no insight at all into the extent to which it prevails. A disease may exist to a great degree all over London, and be scarcely perceptible in the bills of mortality, as has frequently been observed to take place during the prevalence of an influenza. This we

* Vide Medico-Chirurgical Transactions, vol. x. p. 318.

† Page 323.

strongly suspect to be the case in London at the present time, when small-pox appears to us to prevail much more extensively than is commonly supposed; assuming, however, a milder character than is usual, and modified to an amazing extent, by the general practice of inoculation and vaccination. That such is really the fact we are satisfied, as well by the opportunities which we have ourselves enjoyed of seeing the character of the prevailing epidemic, as by the testimony of many Practitioners with whom we have conversed, and by the official report of admissions into the Small-Pox Hospital, recently published. From this last document it appears, that more than three times as many patients were admitted with the casual small-pox in the year 1819 as in 1818; and we have reason to know that they were sent into the hospital from all parts of the town, and, in a variety of instances, could be distinctly traced to contagion communicated by infected individuals. That small-pox, therefore, has been considerably more common in London this last year than has been observed for many years past, we are well persuaded; and the result of the bills of mortality for the year cannot, we imagine, affect this important position; they can only point out, that is to say, the comparative mildness or malignity of the disease, but not the extent to which it prevails.

Sir Gilbert Blane, we think, does not meet the great question of the occurrence of small-pox after vaccination so fully as we are of opinion he might have done, or as the very title of his paper warrants us in expecting. The amount of concession which Sir Gilbert is inclined to make may be stated in a few words. He acknowledges that instances of small-pox do occasionally occur in vaccinated subjects; that the invasion and eruption, in every respect, resemble those of the genuine small-pox. He has seen the disease attended with high fever, and a thick crowded crop of papulæ, such as precedes the most severe and dangerous cases of the confluent kind. This runs on to the fifth day from the eruption, sometimes even to the sixth or seventh, in rare cases, at which time some of the papulæ begin to be converted into small-sized pustules. The disorder then abruptly stops short. On the following day the fever is found to have subsided, with a shrivelling and desiccation of the eruption, and recovery proceeds without the least danger or inconvenience. The face is marked for some time afterwards with brown spots, but without pits. What forms the strong line of distinction between this disease and proper small-pox, according to the author, is, that, with a few exceptions, it does not proceed to maturation and secondary fever, which is the only period of danger. Sir Gilbert is not prepared to deny that death may

have occurred in a few instances; but these adverse cases he states, and we believe with great justice, to be so rare, as not to form the shadow of an objection to the expediency of the general practice of vaccination. The author knows from his own observation, as well as from the testimony of others, that the matter from this disease does, by inoculation, give the small-pox. He adds, therefore, that we can hardly, perhaps, with propriety deny it that name, but it should be distinguished by some strong discriminating epithet, such as *mitigated*, or *modified*. — Page 327—330.

This, we believe, comprises not only the substance of the author's remarks on that peculiar pustular disease succeeding vaccination, which is now becoming so common, but all the details concerning it which are afforded us in this paper. We say that, upon the whole, we are disappointed with this part of it. In any attempt to establish an estimate of the true value and present state of vaccination, it did appear to us that something more was requisite than a mere recapitulation of some of the most common appearances of this disease. We anxiously cut open the pages of this volume that are devoted to Sir Gilbert Blane's communication, in the hopes of finding some light thrown upon those more obscure points in the history of this affection, which can be made out only by the help of varied and extensive observation. It is quite clear, however, that Sir Gilbert Blane is cautious in advancing any decided opinion whatever concerning the disease. The qualifying clauses in the last sentence which we quoted from the paper, and which we have printed in Italics, suggest a kind of doubt whether the author is himself a firm believer in the variolous nature of the eruption: but setting this aside, it is, we apprehend, clear, from the author's own showing, that no reasonable doubt can any longer remain, that variola may occur after vaccination, and that any attempts to conceal this truth from ourselves or the public will eventually tend to the injury of both. The omissions of which we complain in Sir Gilbert's paper, we shall now endeavour to supply as well as we can, premising, that as far as the author's account of the disease goes, it appears to us to be drawn up with much accuracy, and evidently to have been the result of his individual observation.

The first point to which we shall allude is the impropriety of designating these cases of small-pox occurring after vaccination as *failures*. The author of the paper is not singular in this error, but it is one which we think has had a considerable influence in prejudicing the minds of many against the practice of vaccination. They are anomalies, but not failures. As well might the inoculation of small-pox be

called a failure, when, as sometimes happens, the disease recurs in after life. While upon this topic, we may incidentally take notice of the opinions entertained by Sir Gilbert Blane on the subject of secondary small-pox. He tells us (page 325) that one of the most essential and characteristic laws of small-pox is, that it affects the human subject but once in life, and that this law is violated only in rare cases. The result of our own much more limited observation would, we confess, have led us to a somewhat different conclusion. We have had occasion to see, and that too very recently, several cases of what we are firmly persuaded are small-pox occurring after inoculated small-pox; and we are strongly induced to suspect, that if a prejudice in favour of a contrary opinion did not so strongly warp the minds of medical men, and if, therefore, such cases were more commonly expected, they would be much more commonly found. By many we are sure that such cases as we have now alluded to would have been passed over as *irregular eruptions*, arising, perhaps, from that never-failing source of disease in the minds of some, a disordered state of the stomach and bowels; or they would have been at once called chicken-pox; or lastly, no opinion whatever would have been hazarded concerning them.

We have watched some of these cases very narrowly. One of them occurred in the wife of a medical man, who had been inoculated by her father, who was also in the Profession. The extreme severity of the eruptive fever in this case, the appearance of a roseolous rash upon the third day, followed by the eruption of thirty or forty small pustules, bearing all the characters of modified small-pox, and following exactly its ordinary course, satisfied us that it was small-pox which was present. Upon inquiry, it was ascertained that the lady had been inoculated with small-pox while an infant, and that the disease, though mild, had gone through its stages with perfect regularity. This case we allude to, not as any thing singular, but as a fair and well marked specimen of what we believe to be very common. What the disease *really* was, could, perhaps, only have been ascertained by the very objectionable and hazardous mode of inoculation; but we can only express our conviction that it resembled exactly those cases of eruption succeeding vaccination, from which we have ourselves, in two instances, produced genuine small-pox in the unprotected, by inoculation. We think it would be worth while to inquire if these cases are more common among those who have undergone the inoculated small-pox than in those who have taken the disease casually; but as we are not furnished with any means of deciding this point, it would be in vain to hazard a con-

jecture concerning it. When we say, therefore, that cases of small-pox succeeding vaccination are cases of *failure*, we should not forget that the same opprobrium may be cast upon inoculated small-pox, nay, upon the casual small-pox itself, which is sometimes not only insufficient to secure the constitution against a future attack of small-pox, but even against the milder disease—cow-pox. We have seen lately an adult, who had been inoculated with small-pox thirty years ago, take the cow-pox, and pass through the disease, though certainly in a modified form; the glands of the axilla swelling on the third day, and an extensive irregular areola forming on the fourth, and continuing to the sixth day. If, then, a *modified cow-pox* can be taken, as is well known it can, by those who have undergone small-pox, it does not require any great stretch of imagination to understand how a modified small-pox should occasionally succeed cow-pox. The one, indeed, occurs after inoculation, and the other casually; but, on the other hand, it must be remembered, that the one is a mild and the other a malignant disease.

We have long been inclined to believe that it was the mildness of the cow-pox alone which prevented its being communicable, like small-pox, by effluvia. On the 23d August last, we had an opportunity of seeing, at the Small-Pox Hospital, a case of cow-pox attended with eruption. This eruption appeared to us to be of a defined character. It appeared on the 12th day from inoculation, was unconnected with any disorder of the primæ viæ, and it receded on the fourth day. It occurred to us that this child might possibly have been able to communicate the cow-pox by effluvia. Be that however as it may, we think it very possible that there may be a disease intermediate between cow-pox and inoculated small-pox; and such a disease may, perhaps, at some future period of the world, come to supersede vaccination. It is the remark of a man (we wish we were at liberty to name him) who has had extensive opportunities of seeing both small-pox and cow-pox, that the increased attention which is now paid to these diseases will itself be of much use in diminishing the mortality of the former; that in early times small-pox was supposed to be too much beyond the reach of human control, and was allowed, therefore, to extend its ravages too much unchecked; whereas experience has shown that it is within our control, and perhaps even to a greater degree than has yet been imagined.

But it is time that we should recur to the more immediate object of inquiry before us; and we may next, therefore, allude to the varieties in the character of mitigated small-pox.

Sir Gilbert Blane has well observed, that all the phenomena of disease are liable to great varieties and exceptions. "Accordingly," says he, "though the fifth day is the most common limit of this disorder, it sometimes stops short on the third, sometimes not till the sixth or seventh, and, in a very few cases, it has been known to run the common course of small-pox." It has never occurred to us to see any of these *three day* cases, and we suspect they are exceedingly rare. All the others we have occasionally witnessed. There seems, indeed, to be a chain in the degree to which vaccination affects the constitution, which has not yet been sufficiently attended to. We have seen cases where its influence could only be traced by a very accurate observer, where, for instance, without affecting the *symptoms*, or the appearance of the eruption, it has served only to shorten its course, or more properly that of the convalescence. Again we have seen other cases of small-pox succeeding vaccination, where the febrile symptoms, and the appearance of the eruption, were so completely modified by the influence of the latter, that the true nature of the disease could never have been suspected by one who had not observed it in a variety of instances, and marked the insensible gradations by which they run into each other. In our own practice, we have been in the habit of marking these distinctions in the disease by the terms *mitigated* and *modified*; appropriating the former to those cases which exhibit the character of *genuine variolous eruption*, but where the influence of vaccination is apparent only in altering the periods of the disease, and the latter, (*modified*), to such as differ from common small-pox in the appearance of the eruption. One of the first cases which we remember to have seen was of the former kind. Up to the sixth day the disease assumed a very formidable appearance, but it was then suddenly arrested, apparently from the influence of previous vaccination. It was seen by us, in conjunction with the late Dr. Adams, who acknowledged it to be an instance of a very severe, though still a *mitigated* small-pox.

More lately we have had opportunities of seeing the *modified* small-pox in its various shapes. We have observed two different appearances which the eruption assumes, and which we think are among the most common. In the one of these, the eruption appears in the form of a copious crop of pimples, very conspicuous upon the forehead, chest, neck, and arms. About the fourth day, the forehead is observed to be sensibly swelled, and a considerable degree of inflammation will be seen around the base of each vesicle. It may be accidental, but we have noticed that small-pox, after vaccination, when it assumes this form, is not attended by such

severe eruptive fever as attends the second variety, which is not only as severe as the eruptive fever of common small-pox, but is generally longer by one, or even in some instances two days. About the fifth day of eruption in this variety, a few small pimples appear in different parts of the surface of the body, generally on the face, back, and arms; very rarely, indeed, in the inferior extremities. The fever recedes on the appearance of the eruption, which runs through its stages with great rapidity.

From the most slightly mitigated to the most highly modified forms of small-pox, we believe, then, that a gradation may be traced. Whether this affection is ever liable to be confounded with other, and with what diseases, is a point to which we have frequently directed our attention. We have seen two cases that somewhat resembled it in appearance for the four or five first days, the one of which was decidedly a pustular venereal eruption, and the other was, by some, strongly suspected to be such; but the resemblance ceased upon the sixth day, when these eruptions continued stationary, whereas that of modified small-pox would, in the same space of time, have materially altered its character. In two instances which have lately come under our notice, one at the Small-pox Hospital, and the other in King Street, Portman Square, persons unprotected by vaccination took natural small-pox in that modified form which we have described. The latter of these was particularly interesting to us, as having been watched in its progress by a gentleman to whom the public are accustomed to look up with great deference in these matters*. The child lay in the same bed with another who had genuine small-pox in a very severe degree, and who communicated a very severe modified small-pox to her nurse, a young woman of nineteen, who had been vaccinated, and who had a distinct cicatrix on the right arm.

And this leads us to notice the period at which small-pox most usually occurs after vaccination, upon which important point we had hoped to receive some information from Sir Gilbert Blane. In our own practice, we have seen no cases occur earlier than seven years after vaccination; but we have been told, upon authority which we dare not dispute, that they have been seen as early as six months, or even less. Never having seen such cases, we cannot speak of them; but we are sure that, generally speaking, it is not a common occurrence before the tenth year, and the average of our cases have happened twelve or thirteen years after vaccination. We have been forcibly struck by the circumstance, that by

* Mr. Moore, Director of the National Vaccine Establishment.
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far the larger proportion of our cases have been in persons about nineteen years of age. Whether the cessation of the growth of the body, or any other less obvious change in the constitution, which takes place at that period of life, has any share in contributing to this peculiarity, we do not presume to determine. We cannot, however, overlook the curious fact, that the disease we are speaking of is much more common now than it was; and we know no better way of accounting for this, than what is suggested by such an hypothesis.

We have directed our attention also to the proportion of vaccinated subjects, who are affected by mitigated or modified small-pox, but we have been unable to form any opinion upon the subject which is at all satisfactory to us. The calculations of Mr. Dawson, and Mr. Christian, of Liverpool, quoted in the earliest work on this subject with which we are acquainted*, do not appear to be founded on data sufficiently accurate to give us even an approximation to the truth. From the official report for 1819, of the Physician of the Small-pox Hospital, Dr. Ashburner, it appears, that between the 22d December 1818, and the 2d December 1819, nineteen cases had been admitted into that establishment, being about one in eight of the whole admissions. During the former year the proportion had been as high as one in six. This, of course, does not bear at all upon the question of the proportion in which it affects vaccinated subjects; and we only mention it incidentally, to mark the extent to which the disease prevails. It certainly occurs most frequently where the contagion of small-pox is any where particularly virulent; and, under such circumstances, we have observed it to affect persons who had often resisted small-pox before. For the most part it will be found, that those who are attacked by it have a large and irregular cicatrix; but this is by no means constant. One of the best marked cases we ever saw, occurred at the Small-pox Hospital in the middle of August last, in a girl only eleven years old, who came from a neighbouring school, from which, ten days previously, a girl with genuine distinct small-pox had been admitted. The former girl had a very perfect circular cicatrix on the left arm.

We have most commonly observed the disease to occur in those who were vaccinated in the country: the coincidence may be accidental, but a considerable number of our cases

* Dr. Monro's "Observations on the different kinds of Small-pox, and especially on that which sometimes follows Vaccination." Edinburgh, 1818. Constable.

have come from Berkshire and Hampshire. It has chiefly occurred among those who have recently arrived in London; and we have even thought, that the change of air may have had some effect in predisposing to the attack; but upon this, of course, we lay no stress. There is some reason to suspect that it occurs in certain families more than in others; and, if this should prove correct, it will serve as a curious illustration of that anomaly in the history of measles, to which Dr. Baillie some years ago directed the attention of the Profession*.

Sir Gilbert Blane tells us, (page 330) that a disease corresponding exactly with the mitigated small-pox after vaccination is mentioned in the Report of the Central Committee of Vaccination at Paris, made in December last, as having occurred in France, and that they refuse the name of small-pox to it. We are satisfied they will not long adhere to this opinion; and we may here, by the way, take an opportunity of stating, that the staunch supporters of the infallibility of cow-pox are continually throwing in our teeth that cases similar to what we call small-pox after vaccination, do not occur upon the Continent; and that small-pox is eradicated from many countries, and exists only in England to the reproach of the country. Sir Gilbert Blane falls into this style of argument more than we should have expected from his acknowledged acuteness and candour. It may be very true, as he states, that vaccination was adopted instantly in Peru, in consequence of a flash of conviction from the light of evidence†; but we shall not be easily persuaded, that there is more good sense and sober judgment among the inhabitants of the Andes, than among those of the City of London. We suspect too, that we are arguing very much *ab ignoto*, when we talk of the disappearance of small-pox from so many countries. It is very easy for the Central Committee of Vaccination at Paris to deny it the name of small-pox; but small-pox it is, and must in all probability have had its origin from casual cases. There is abundant evidence in Dr. Monro and Dr. Thomson's works, that modified small-pox exists *all over the Continent*, though certainly not hitherto to the same extent as has been observed in this country. Let us, however, wait a few years before we draw our conclusions from this source.

We had intended to speak at some length as to the capability of the modified disease to infect the unprotected with

* Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge. Vol. iii.

† Page 334.

genuine small-pox; but, on referring to Dr. Monro's work formerly mentioned, we find the thing done to our hand, and more circumstantially than we had been aware of*. We shall only mention, therefore, that on the 8th September last we saw a young woman, M. M., æt. seventeen, inoculated with matter from a very strongly marked case of small-pox after vaccination, assuming the form of what is called horn-pock. The arm upon the ninth day exhibited four large jagged vesicles, surrounded by erythematous inflammation, in which smaller vesicles were forming. A copious crop of distinct small-pox pustules followed.

Upon the 10th of February, 1820, we saw two children, both of whom had been regularly vaccinated, inoculated with matter (if it could be so called) taken from one of the very mildest cases of small-pox after vaccination that we ever remember. The arms of both children inflamed, and there was the usual appearance of *modified areola and vesicle*, but no constitutional disturbance whatever. Some of the lymph from one of these highly modified vesicles was taken on the fifth day, and inserted into the arm of a child nine months old, whose mother was obstinately prejudiced against vaccination. The arm inflamed in the *regular* way; the infant had a very severe and even alarming attack of eruptive fever, followed by the appearance of about thirty pustules, which went through their regular course. The scabs had not fallen from the arm when we last saw the child†.

No doubt whatever can be entertained, that modified small-pox is a disease not to be compared in point of severity with natural small-pox; but we have observed in Dr. Ashburner's printed Report‡, that that gentleman goes further, and considers it as much milder than inoculated small-pox. This we are glad to be assured of, for our own opportunities of observing inoculated small-pox have been (we should rejoice to say) very scanty, and are of course insufficient to enable us to speak decisively on this point. But even without this assurance, we should have no hesitation in saying, that it is the bounden duty of every medical Practitioner to recommend vaccination. We do not indeed shut our eyes to what must be acknowledged to be a very great evil; we mean the constant anxiety in the minds of parents, that their children may at some period of their lives take the modified small-pox.

* Chap. vi. page 209. — Monro's Observations on Small-pox.

† These cases were watched in their progress by two of our professional friends.

‡ This Report, just published, we shall append to the present paper.

If it should hereafter appear that the cases (*not of failure*), but of small-pox after vaccination, are not more numerous than at present, the chances are so infinitely in favour of vaccination, that no relaxation from the rule ought to be permitted. The question, however, must at last certainly hinge upon the proportion of vaccinated subjects which become affected by the modified disease. We perfectly agree with the author of the paper that there is less danger, in London at least, of inoculation spreading the disease, than was at one time supposed. It is quite clear that it cannot well be more general than it was during the last summer, when no inoculation, or next to none, was practised. The extent, in fact, to which a single case of small-pox may spread the disease is quite incalculable; and whether there be one or ten, will not, upon the whole, make so much difference as might be imagined, if we bear in mind what we believe there is no doubt of, that the contagion of small-pox may be conveyed by the clothes of an individual who is himself unsusceptible of the disease.

A multitude of causes are in the mouths of medical men, sufficient, as they think, to account for the occasional occurrence of small-pox after vaccination. Among these the first we shall mention is the inoculating, either directly or indirectly, from an *imperfect vesicle*, that is to say, one which has not gone through its stages with perfect regularity. This is what the Vaccine Board lay so much stress upon in their Report for 1816. To us it appears highly theoretical, and contrary to analogy. We have shown that irregular or modified small-pox is capable of producing the *genuine* disease.

Another of these supposed causes is the *deterioration of the virus* from successive inoculations. So far from this being an adequate cause, we have the assurance of the late Mr. Wachsel, whose knowledge of variola and varioloid diseases was very extensive, that successive inoculations improved the matter, and he would never on any account consent to alter the direct line of descent. The lymph with which he was inoculating at the time of his last illness, and which is probably still preserved, he could trace back to a very distant source.

The *disturbance of the vesicles* we are not inclined to speak more favourably of than either of the preceding causes. We know no instance in which the secondary disease could be fairly attributed to that source, and we know of a vast many where it certainly had nothing at all to do with it. On the authority of Mr. Wachsel, we are disposed to speak more cautiously on the fourth of those causes to which small-pox after vaccination has been attributed:—we mean

excessive inflammation of the vesicle, converting the true vaccine lymph into common pus. Mr. Wachsel, we believe, had seen some cases where, after such an occurrence, the second vaccination had gone through its regular stages; but we cannot speak very positively even upon this point.

To what cause then, it may be asked, are we to attribute the frequent occurrence of small-pox after vaccination? Our answer to this important question may be anticipated from what we urged in the last Number of the *REPOSITORY*. It will never do to say that it is owing to spurious matter, or imperfect vaccination, or rusty lancets. We must dive much deeper into the secrets of pathology, before we shall reach the truth. We are ready to allow that *peculiarity of constitution* will go some way towards affording a solution of the difficulty, but it is not far that even this will carry us. We must look to the laws of the variolous poison. We must be content to acknowledge, that we have been wrong in laying it down as so fundamental a law in its action, that it affects the body but once during the course of life. It is a curious fact in the history of the disease; but it is not an *essential law*. We may, perhaps, go a step farther, and say, that cow-pox is only in itself a modified small-pox. This was one of the earliest suppositions entertained regarding the nature of cow-pox; and we suspect it to be the correct one. It will not be necessary to pause here with the view of anticipating an objection which may be started, arising from some supposed specific distinction between a vesicle and a pustule. We trust that this piece of pathological nicety is now pretty generally exploded. The hypothesis seems to us to be very well borne out by every view which we have been enabled to take of variolous contagion.

And now, what are we to say to the last point to which Sir Gilbert Blane directs the attention of his readers in the paper before us — the power of vaccination to extirpate the small-pox? Sir Gilbert becomes very animated on this topic; and though we may differ from him in opinion, we yet admire the warmth with which he urges his conviction. He tells us*, that it is now matter of irrefragable historical evidence, that vaccination possesses powers adequate to the great end proposed by its meritorious discoverer, in his first promulgation of it in 1798, namely, the total extirpation of the small-pox. It is demonstrable, says he, further, in the next page, that if at the first moment of this singular discovery, at any moment since, at the present, or any future moment, mankind were sufficiently wise and decided to vaccinate the

* Page 323.

whole of the human species, who have not gone through the small-pox, this most loathsome and afflicting of all the scourges of humanity would instantaneously, and for ever, be banished from the earth. This point we will not dispute with the benevolent author; but we cannot conceal our fears, that a consummation so devoutly to be wished for is yet impracticable and hopeless. If vaccinated subjects will, as we are persuaded will always be found to be the case, under certain circumstances, take small-pox, it is needless to talk about exterminating the disease; nay, it is, we think, wrong to hold out such hopes, as it may give the public reason to expect what will never happen. But though we cannot extirpate the small-pox, we have the most ample and convincing evidence, that Nature, in her infinite wisdom, has given us the means of mitigating its violence, and of subduing it from the most malignant disease which has ever been recorded, to one scarcely so severe as the majority of those to which mankind are exposed.

At an half-yearly General Court of the Governors of the Hospital for Small-Pox, for Inoculation, and for Vaccination, held at the hospital at Pancras, on Thursday, the 9th day of December, 1819, the Physician, Dr. Ashburner, presented the following statement, which was read, and ordered to be entered on the minutes, and printed for circulation, as follows:—

To His Royal Highness the DUKE of YORK, &c. &c. &c., President; to the Vice-Presidents, Treasurer, and Governors, of the Hospital for the Small-Pox, for Inoculation, and for Vaccination.

Your Physician desires to state,

That since the termination of the last year, when he had the honour of offering to the General Court some observations upon the diseases which fall under his treatment in your hospital, he has continued to have opportunities of seeing numerous cases of the small-pox, and of the cow-pock; and likewise of that varioloid eruption, which sometimes occurs after vaccination. Not only the alarm which many circumstances connected with the inquiry upon these complaints are calculated to excite in the public mind, but the desire to investigate some very important and curious morbid phenomena, lead him to feel interested upon this subject. At the end of another year he is induced to offer to your notice a statement of the principal facts which have been afforded him of the character and occurrence of these diseases.

The number of patients afflicted with the casual small-pox,

that have been admitted into the hospital from the 22d of December, 1818, to the present time, is 159; of these 24 are still under treatment in the house; 81 have been discharged cured; and 54 have died.

The increased rate of mortality during this period may be accounted for from three causes; the principal one of which is the late stage of the disease at which many of the patients, under very unfavourable symptoms, have applied for assistance. It is well known that cases of the small-pox are received within the doors of your hospital at any time during the progress of the complaint; and some of the patients of the past year have been in so dreadful a state, that they have died within twenty-four hours after their admission. Another cause of the great mortality is the unusual severity that has characterized the symptoms of the disease: in the previous year your Physician stated that its general character had been mild; this year it has been quite the reverse; the greater number of cases, not only of those admitted, but also of those seen at their own houses, have been of a very malignant kind. In several instances the confluent form of the disease has been, at an early period, attended with petechial eruptions, or with erysipelatous inflammation, and extensive vesications. A third cause for the increased rate of mortality is found in the description of persons, who have, for the most part, suffered fatally under this disease: they are such as have been careless and dissolute in their habits of life, or as have been previously subject to the operation of debilitating circumstances: sailors, brewers' servants, helpers about stables, and parish paupers.

These facts, however, are not adduced to account for all the cases of death which have, during the last twelvemonth, occurred in your hospital. The small-pox is often perfectly uncontrollable, and patients afflicted with it will sometimes die, when the promise of a favourable issue is held forth by the symptoms, even after the sufferings are supposed to be at an end, and the period of convalescence to have arrived.

Many persons who are alarmed at the reports which they have heard concerning the frequent occurrence of the small-pox, after what has been called perfect vaccination, are eager to lay aside the blessings that are derived from the discovery of the immortal Jenner, to recur to this horrible disease for an imaginary safety! Many persons who have seen a few cases of small-pox, know not the dreadful aspect which it is capable of assuming, and many others are blindly led by the obstinate influence of prejudice and of ignorance, to court for the dearest objects of their solicitude, their children, and their nearest friends, the dreadful horrors and

the dangers of this painful and loathsome malady. Let those who are advocates for the small-pox, and who, by again widely introducing its inoculation, would spread its pestiferous influence to numbers of their unguarded fellow-beings, once visit the wards of this hospital. Let the mother who has nourished an infant at her breast, view the likeness of an object to which she can reduce it, by inoculating it with the small-pox. Let her see a patient at the commencement of the disease suffering with headach, restlessness, and fever. Let her view another who has borne, for a few days, the agonies of the eruption—on the eighth or ninth day the whole surface of the body covered with little abscesses so painful and so irritating, that the patience of human nature is hardly able to sustain such misery! If the complaint be viewed in its progress, how horrid is the spectacle at each succeeding period! A fellow-creature covered with scab, sore, or matter loathsome from stench, and disgusting to look upon, moaning with pain, or, may be, raving with delirium; and at last, perhaps, exhausted with the wearing agony of his suffering!

Is this the object to which a mother would convert a darling infant? Is it to such a state that the heedlessness of ignorance, by engendering a dreadful infection in one person, shall reduce, perhaps, some hundreds of fellow-beings?

And who shall promise that death will not take place, or that, if life be spared, the whole frame shall not be ruined by the vile consequences of such a pestilence, swelled glands, large boils, and extensive mortifications, that not only disfigure the body, but leave for ever in the constitution the traces of their havoc?

But all experience has pointed out, that death is very often the consequence of an attack of the small-pox, not only when it arrives casually, but when it is artificially produced. The wise policy of your benevolent Institution has made a provision to meet the ignorant prejudices of some few persons who are still obstinate in their desire to continue the propagation of this disease. Through the kindness that you have shown to these unenlightened people, forty persons have been inoculated within your walls:—Unlike the result of some cases of the previous year, none of these have died, but several have suffered very severely.

It is gratifying to reflect, that this Institution has afforded the benefits of vaccination, within the year, to 3297 persons, whose cases have all been narrowly watched, and have all been registered in the books of the hospital.

It is an additional source of gratifying reflection, that, since the last Report, one only of the 46,662 cases which have been vaccinated in this hospital, has been affected with the varioloid

eruption that occurs after the cow-pock, and in that case the symptoms were peculiarly mild. There were about forty pustular eruptions upon the body, and the child had been affected with fever only for two days. There is no doubt that this complaint occurs much oftener after vaccination than was at one time suspected. It would be difficult, and, perhaps, under the present state of our knowledge, impossible, to account for this circumstance; but the occurrence of it, even more frequently, would hardly afford an objection to the practice of vaccination. Nineteen cases of this eruptive complaint have occurred during the year in your Establishment. Dr. Gregory, who had the kindness to attend the greater number of these, can testify, that though in some of the severest instances there was, at the outset, a degree of smart fever, yet, upon the whole, it was not to be compared in severity to the casual, or even to the inoculated small-pox. The patients were well in a few days. Your Physician has, during the same period, had other opportunities of observing cases of this disease, and he can, from his own observations, corroborate the statement of his friend Dr. Gregory.

Your Physician cannot conclude this communication without some expression of his sorrow for the loss which your Establishment has suffered during the year, of perhaps its most valuable officer*. The Governors had occasional opportunities of observing the ardour, regularity, and diligence, with which the late resident Surgeon-Apothecary conducted his department of the Institution; but it fell to the lot of the Physician to observe him more frequently, and at more various times, not only discharging his duties with zeal, but administering his superior skill to desponding and suffering patients, with a humanity, and with a cheering benevolence of manner, which all good men would wish to assume towards their inferiors.

JOHN F. ASHBURNER,

7, Fitzroy Square, 9th December, 1819.

Extracted from the Minutes.

A. HIGHMORE, Sec.

13, Holborn Court, Gray's Inn.

Return of Patients from January 1, 1819, to January 1, 1820.

Casual small-pox	190
Inoculation	44
Vaccination	3328
Died	60

* Mr. T. C. Wachsels, who held the office for upwards of 30 years.

Increased Numbers in 1819.

In-patients for casual small-pox	132
Inoculation	10
Out-patients for vaccination	1167

W. L. WHEELER, Resident Surgeon.

FEVER.

IN our general reviews it will have been noticed, that the three leading questions of vaccination, fever, and syphilis, have been discussed apart from the consideration of other topics. Still acting upon this plan, we shall now therefore proceed to a slight notice of the prominent production of this country on the head of fever, which the last six months of the preceding year have produced.

A second and much enlarged edition of Dr. Armstrong's very able treatise on typhus*, &c. has, within this period, made its appearance, in which the author has kindly complied with our wishes formerly announced†, that he would advert to the disputed point of contagion, and to the doubted doctrine of critical days. On the first of these heads Dr. A. has expressed himself in the following words:—

"The described modifications of the common continued fever, the synocha and the synochus, arise from ordinary causes, such as cold, heat, and the like, but typhus arises from one specific cause—contagion. Now in the course of my experience I cannot recollect a single instance where a fever proceeding from such ordinary causes was changed into one possessing the specific contagion of typhus, and therefore I am strongly disposed to conclude, that the thing never happens, though upon a point of such vast concernment it does not become me to speak with positive assurance, as the opinions of many discerning men are on the opposite side of the question.

"It is consonant (our author goes on to say) with the general analogies of nature to suppose that the various specific contagions have originated from combinations of physical elements, and that these contagions have afterwards propagated themselves by the peculiar powers impressed at their first generation. But if this view of the subject be correct, why cannot we trace the origin of particular contagions to various eras in the history of physic? and

* Practical Illustrations of Typhus Fever, of the common Continued Fever, and of Inflammatory Diseases, &c. By John Armstrong, M.D. &c. Third edition.

† See our review of Dr. A.'s work on Scarlatina, &c. in Vol. XI.

why do not fresh contagions now arise from the combinations of physical agents? In answer to these questions it may be remarked, that there is a limit fixed to physical combinations, and that as the world has existed for so many ages, most, if not all of the combinations that could take place have long since been completed; and hence we have no distinct record in history of the generation of particular contagions; and hence too, perhaps, we have not sufficient reasons from past experience to expect the generation of any new one, except in some great revolution of time. If it be the fact, as I am inclined to believe, that genuine typhus always originates from contagion, how can the present epidemic be accounted for, which has raged in so many parts of the United Kingdom, for at least the last three years? My own observations would lead me to infer, that what has been so generally termed the epidemic is not one specific fever, but three fevers especially different in their exciting causes: and these fevers are, namely, typhus proceeding from a specific contagion, the common continued fever proceeding mostly from atmospheric influences, and a peculiar fever which arises from the huddling of many human beings together in confined and filthy situations*.

We cannot, we must confess, accord with Dr. A. in these conjectural assumptions. Our own observations and experience lead us to infer, (and this is a doctrine we have more than once inculcated in the pages of the *REPOSITORY*.) that under particular circumstances, local and constitutional, exterior and inherent, the febrile derangement, which, in the first instance, acknowledged an exciting source independent on contagion, may in its course come to engender an artificially contagious material; and that from these incidental circumstances does the specific character of infectious diseases for the most part take its origin. Upon the principles of Dr. A., should not typhus always be at pretty nearly the same standard in point of prevalence? and why should it be epidemic at one time, and merely accidental at another? If to this query the advocate of exclusive contagion replies, we must concede a great deal to the modifying power of the epidemic atmosphere, he at once shifts himself from his strongest position, and admits the objections of his opponents; since the very idea of a specific, *ab-origine* contagion implies a power operating without the aid of what is about and around us; and, as we have just said, neither typhus nor any other infectious distempers ought to be susceptible of any difference in

* In respect of critical days, according to the common acceptation of the term, Dr. Armstrong avows himself to be exceedingly sceptical.

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SPASMODIC CHOLERA
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AND
OTHER ADJACENT COUNTRIES AND ISLANDS, AND AT SEA.

COMMUNICATED IN A LETTER FROM
FREDERICK CORBYN, Esq.
ASSISTANT SURGEON ON THE BENGAL ESTABLISHMENT, AND
MEMBER OF THE COLLEGE OF SURGEONS OF LONDON.

WITH
COMMUNICATIONS ON THE SAME SUBJECT,
BY FAVOR OF THE CHAIRMAN AND DEPUTY CHAIRMAN
OF THE EAST INDIA COMPANY;

AND
FROM THE ISLANDS OF THE MAURITIUS AND CEYLON,
BY FAVOR OF THE MEDICAL BOARD OF THE ARMY;

WITH REMARKS.

By SIR GILBERT BLANE, BART. F.R.S.
PHYSICIAN TO THE KING.

FROM THE ELEVENTH VOLUME OF THE MEDICO-CHIRURGICAL
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London:

PRINTED BY G. WOODFALL, ANGEL COURT, SKINNER STREET.

1820.

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MY DEAR SIR,

Sauger, September 7, 1819.

I RECEIVED your communication through the Governor-General, containing enquiries regarding the epidemic which has desolated India for the last two years. In November 1817, I drew up a description, with an account of a treatment which I had adopted, and found remarkably successful. This was contained in a single sheet, and printed

copies of it were distributed by public authority to all the different stations. In August, 1818, I put it into the form of a small tract, which was also printed in this country. But as a considerable time has since elapsed, I shall, in order to satisfy your enquiries, relate the further progress of it since that time, with a detail of the practice as confirmed and improved by further observation and experience.

This singular and calamitous epidemic commenced in August, 1817, at Jessore, about a hundred miles to the N. E. of Calcutta, and spreading from village to village, destroying thousands of the inhabitants, it reached Calcutta early in September. It extended from thence into Behar, depopulating many large cities, till the inhabitants fled to other spots. Benares, Allahabad, Goruckpore, Lucknow, Cawnpore, Delhi, Agra, Muttra, Meerat, and Barcilly, have all suffered in succession; and it is curious and important to remark, that it did not appear in these districts at the same time, but leaving one it soon shewed itself in another.

At length it appeared in the grand army, first at Mundellah, then in the Jubbulpore and Sauger districts. From thence it spread to Nagpore, and continued its course over the Deccan in a violent degree. At Hussingabad its ravages were terrible for several days; and taking its course all along the banks of the Nerbuddah it reached Tannah.

Visiting the famous cities of Aurungabad and Ahmednugger, it spread to Poonah; from thence to Panwell in the direction of the coast, where it extended to the north and south, visiting Salsette, and reached Bombay in the second week of September, 1818, one year after its first appearance at Calcutta.

While this was passing in the west of the Peninsula, the epidemic was making the like progress to the east and south, progressively spreading on the whole Coromandel coast, and we have heard of its passing from thence to Ceylon, to the pure air and temperate climate of Siam, from thence to Malacca, and along the straits of Sunda to China*. So that in less than two years it had embraced a space from the most northern parts of Indostan to Ceylon, and from the Indus to China. It has also made its appearance on board vessels, both in harbour and at sea. So alarming indeed has been the extent and rapidity of the progress of this dreadful pestilence, that it becomes a duty to warn Europe of its danger, for we learn from the practice of Sydenham that this disease was twice epidemic in London, in the end of summer and the beginning of autumn.

In my farther account of this disease I shall take the liberty of quoting amply from the Bombay

* It has since reached the Maoritius.

communications. These authorities pretty generally concur with what I laid down with regard to it, as it appeared in the centre division of the army. The vomiting and purging of watery matter invariably took place. The absence of biliary fluid in the stomach and duodenum was also singularly exemplified, and its return was considered as affording a favourable prognosis. Dr. Burrell, Surgeon of his Majesty's 65th regiment, observed that "the first symptoms of the attack were languor with occasional pains and sense of numbness in the extremities, violent head-ache and thirst: shortly there ensued nausea, vomiting of slimy matter, but *no appearance of bile from the stomach or bowels*; then followed spasms so violent as sometimes to require six men to hold the patient.

Mr. Assistant Surgeon Whyte, from whose accurate and well-defined account I shall take the liberty of quoting largely, agrees, that in the whole of his practice there was the same appearance in this ejected and evacuated matter. "The disease generally begins," says Mr. Whyte, "with a watery purging, unattended with griping or any pain. At an interval, generally from half an hour to five or six hours, but sometimes without any interval, comes on vomiting of a white fluid; and I will here add my testimony to a heap of evidence already accumulated, that in this form of the disease, I have never observed any thing resembling bile discharged upwards or downwards.

The vomiting and purging are soon followed by great debility and sinking of the pulse; the extremities become cold; the eye sinks into the socket; the vessels of the *tunica adnata* are injected with blood, from which if the disease advances a film in a few hours is formed; the features express the deepest anguish, and the eyelids are either wholly or half closed. The patient invariably complains of great heat at the stomach, and calls incessantly for cold drink, although he is warned of the danger attending it. The tenesmus now becomes violent, although nothing is discharged but the fluid above-mentioned, and a substance like the coagulated white of an egg. The uneasiness and jactitation are so great, that it is with the utmost difficulty that we can get an opportunity of feeling the pulse, which by this time is not always perceptible, although it is generally so till the spasms come on. These attack at no fixed or determined period of the disease, but in general not for many hours after the commencement of the vomiting and purging. Medicine given before their appearance will generally be attended with success."

This is one peculiarity differing from the epidemic of the centre division, in which the spasms came on before the vomiting and purging. I witnessed some cases latterly, in which these muscular spasms attacked the calves of the legs and ab-

domen, subsequently to the accession of the purging and vomiting; but in these cases there was evident spasm of the stomach and bowels.

"The spasms are always of the tonic kind, attack first the toes and legs, and extend up to the thighs, chest, and arms. When they reach the chest, the breathing becomes so urgent, the sense of suffocation so great, that the diaphragm must I think be spasmodically affected at the same time."

"The most unfavourable and dangerous signs are the coldness of the surface extending to the region of the heart and stomach. The skin under the nails becomes inverted towards the outer skin; the tongue becomes icy cold; an universal colliquative sweat comes on with shrivelling of the cuticle of the palms of the hands and soles of the feet, the spasms declining while these symptoms continue to increase. In general all pain and spasm leave the patient before death, and although the heart cannot be felt to beat, he expresses himself easy, and says he is better. But sometimes I have seen him in the greatest agony, rolling himself on the ground and groaning, sometimes belching, most piteously. This latter circumstance is, I think, confined to patients who linger three or four days before death comes to their relief, in whom the disease appeared at first to have been vanquished, but whose *vis medicatrix naturæ* was

not strong enough to maintain that complete reaction of the system on which the restoration of health depends."

With regard to the appearances on inspection after death, I shall also borrow largely from Mr. Whyte, to whose zeal and exertions, as well as liberal communications, his professional brethren are much indebted.

"Upon opening the abdomen, the most striking appearance was, the enormous distension of the stomach and bowels, not with air, for they were nearly throughout filled with something of a consistence intermediate between that of a fluid and a solid; there was not much of bloody turgescence on their surface, but they wanted the moisture and glossy appearance of health. The liver was much enlarged, apparently from the quantity of blood contained in its vessels, and on one part of its convex surface there was a considerable extravasation of blood. The gall-bladder was filled with bile, and projecting beyond the edge of the liver. The bile was of a very dark colour, and the gall-ducts pervious. The stomach was filled with an immense quantity of half-digested rice and meat. The contents of the small intestines were dark-colored, apparently from an admixture of bile. The contents of the large intestines resembled in color what was evacuated *per anum* before death, that is of a whitish colour, and fragments of a

tape-worm were found, parts of which had been discharged while the patient was alive. The bladder was quite empty and wholly shrunk into the pelvis. I thought the kidneys were of a diminished size. The lungs were so much collapsed that they appeared hardly to fill one-half of the cavity of the chest. The left portion of them was marked with several black spots, but whether they were recent I could not determine. There was no fluid in the pericardium. In the Europeans the appearances in the chest were exactly similar to the above, with the exception of the black-colored spots. The stomach and intestines were much distended, but with wind only, as appeared from their collapsing the moment a puncture was made into them; but the veins on the outside of both, as well as those of the mesentery and mesocolon were turgid with blood, so was the liver, and the gall-bladder was, as in the other case, full of bile. The urinary bladder was completely empty. I shall conclude with remarking, that from the contents of the small intestines in the Sepoy being dark-colored, while those of the large retained the light color which marks all the discharge in this disease, it appears to me that in this case the disorder was proceeding to a favourable termination, which would have been completed had the patient's strength been sufficient."

An important question arises regarding its contagious or non-contagious nature. So many of

those who are exposed to it, escape it, that I am unwilling, as well as unable, to believe it contagious; and were such belief general, it would be productive of great inconvenience and distress, by the dereliction of the sick to which it would give occasion. Among those who have reported on this disease, there is a difference of opinion on this subject. Mr. Surgeon Anderson says, "It is supposed to exist in the atmosphere, from its pervading every where so extensively; but how comes it to spread in opposition to a continual current of air, namely the S. W. Monsoon? Nevertheless the idea of its being contagious is entertained by few."

Mr. Surgeon Jukes, in his report to the Medical Board, states, that he had no reason to believe that the disease had been contagious. "Neither myself nor any of my assistants, who have been constantly among the sick, nor any of the Hospital attendants, have had the disease. It has not gone through families when one has become affected*. It is very unlike contagion too in many particulars. In general I think it has been remarked, that the greatest number of people are affected the first few days after it has made its appearance in any place; whereas contagion would be quite the reverse. There is undoubtedly considerable obscurity however at present belonging to this very singular

* It appears from the preface of the Medical Board to their report, that Mr. Jukes afterwards altered his opinion on this subject.

epidemic, and the laws by which it has been moving, from place to place, are very unlike those of common epidemics. If the exciting cause be something in the atmosphere, which has had its influence from Bengal to the Deccan, how did it come directly against the S. W. wind that has been blowing upon this coast since June? How does it happen that the winds from the ocean still spread the disease? And if it be something general in the atmosphere, why has it not hitherto made its appearance in some two distinct parts of the province at the same time? Nothing of this kind has, I believe, been observed. It still seems to be creeping from village to village, rages for a few days, and then begins to decline."

Nevertheless I have to inform you, that the general opinion is against contagion.

In some situations in India the climate exceeds that of many parts of the world in salubrity and regular temperature, and in which sickness and endemic disease has seldom prevailed. Yet from the Nepaul range of hills running in a line with the snowy mountains which surround the beautiful valley of Catmandoo, to the sandy desert plains extending from the Indus along the Ganges and to Cape Comerin, has this dreadful epidemic spread itself.

I have observed the disease vary by perceptible

degrees with the changes of temperature, and as these changes took place, it seemed capable of operating powerfully upon man and beast; and although it cannot cease to be marvellous, yet in the grand army a number of cattle died in the most sudden and unaccountable manner. It is a fact, that the indigent and naked part of the lower order of natives seemed to be principally affected by the epidemic influence. I mean those who were confined to particular parts of India, and had never travelled elsewhere; whilst those who had learned how to evade the severities and vicissitudes of climate escaped the accumulated sufferings and aggravated forms of the disease. In those peculiar local situations in India where the land was fertile and teemed with vegetation of rice to a noxious degree; in others, where the grass grew man's height; and in forests of timber and of brushwood where the rays of the sun seldom penetrated, where the waters of grand sacred streams, the Ganges and Hoogly, receded from the land and left a muddy soil and putrid exhalation; nay, in the very spots where, for years out of remembrance, exhalations rose from marshy bogs, acted upon by intense and suffocating heat, even in these very baneful districts, this disease was never known till now; the villages which these deleterious lands contained are now, I am informed, entirely depopulated. The pestilence added to *miasmita* had a most terrible effect. But if the history ended here, we might indeed assign these local effluvia as a

cause, but the fairest portion of the Indian Continent, where health was no illusion, where sickness was a stranger, where mountains rose covered with the finest verdure, where rain fell monthly in refreshing showers, where there was no deluging of plains or noxious vapours to contaminate the air, no forest nor grass-jungle to impede its free circulation, where the heat was temperate, equable, and invigorating, where the land was fertilized and the husbandman rewarded, where the luxuriance of nature exhibited a beauteous prospect from the adjacent height; it is too true that in this happy country, the variation of temperature was amazingly great; the disease appeared, and this beautiful country was nearly depopulated.

It now affords me particular pleasure, as it will be highly gratifying to you, to turn from the melancholy scene I have just described, and inform you that the treatment I have hitherto followed, and which the Marquis of Hastings, whose great anxiety on the subject cannot be enough admired and commended, did me the honor to have published in general orders and circulated in the army throughout India, has proved eminently successful. I shall now quote the authority of others for the excellence of the remedies which I found so decidedly and invariably successful in my own practice, and it is gratifying to me to reflect, that through the promulgation and general

adoption of them, an incalculable number of lives has been saved.

The outline of the treatment alluded to, is, to administer twenty grains of calomel (in powder not in pills) and to wash it down with sixty drops of laudanum and twenty drops of oil of peppermint in two ounces of water, to bleed freely in the early stage, and to support the warmth by external heat, the hot bath and hot friction, and internally by cordials.

The first report is dated Seroor, the 22d of July 1818, by Mr. Assistant Surgeon Wallace. He remarks, "The disease is most formidable. We have found the large doses of calomel, oil of peppermint and laudanum, generally succeed in checking the purging and vomiting. But the most formidable symptoms are the sudden debility and coldness, which seem to indicate the use of the most powerful stimulants. The hot bath has been found very useful." This gentleman's third report states as follows: "I believe Mr. Corbyn's practice to be very efficacious when adopted early. The majority of cases did not apply for relief until they had been attacked for some hours, and the medicines were almost invariably rejected in common with every other liquid. I determined to administer the medicine in another form, and rubbed up two grains of soft opium, with fifteen grains of calomel, and about two drachms of

honey. This was gradually swallowed, being dropt into the patient's mouth by the finger. After this he was placed in the hot bath, and small quantities of hot arrack and water mixed with spices and sugar given to drink. The patient commonly fell asleep, and in favourable cases awoke free from danger. In others the coldness and spasms recurred, when recourse was again had to the hot bath, and opium administered in various forms. Twenty-two cases only were admitted yesterday, and all of them except two have recovered."

Dr. G. Burrell, Surgeon of the 65th regiment, dates his report at Seroor, 27th July 1818, and makes the following return. It broke out on the 18th instant.

Admitted	21st	.	.	1
	22d	.	.	6
	23d	.	.	6
	24th	.	.	18
	25th	.	.	22
	26th	.	.	7
				—
				60 Died, 4.
				—

"On admission I bled in every instance, in general to a good extent. Where universal spasm existed, venesection was carried *ad deliquium*, and the patient was at the same time put into a hot

bath of 110°. The spasms were, by these means, invariably relieved, nausea and vomiting alleviated, so that the stomach bore the exhibition of calomel in scruple doses, combined with laudanum, which doses were frequently repeated; in short, the opium was given under every denomination, with calomel, and I believe the calomel will be found to rest on most stomachs *per se*.

The next report is from Mr. Surgeon Whyte, dated Seroor, the 28th of July, 1818. He states, "The practice I had followed was that first recommended by Johnson*, and since by Mr. Corbyn, in which the corner stone and sheet anchor is calomel, in a dose of fifteen or twenty grains of the former, to an adult according to his strength."

We now come to that of Mr. Assistant Surgeon Daws. His letter is directed to Dr. Jukes at Tannah, dated at Aurangabad, 29th of July, 1818. He remarks as follows: "I presume you have seen the letter written by Mr. Corbyn, who had charge of the Native Hospital, centre division of the army, at Eritch, to Captain Franklyn, Assistant Quarter-Master General of the same division. On this subject I could not perhaps do better than recommend you to pursue the plan of treatment therein laid down, as it is the same, with very little variation,

* In his work on the influence of tropical climates on European constitutions, where he quotes the case of a seaman who had swallowed a scruple of calomel.

that I have adopted, and you will be glad to hear that the success of my own practice tends to corroborate it."

The next report is from Mr. Surgeon Craw, dated Seroor, 30th July, 1818. He observes: "The calomel and laudanum plan, with most diffusible *stimuli*, and the hot bath, have been eminently successful; and if application is made within four or six hours from the first appearance of the disease, the cure is almost certainly effected." In another place he remarks, that a bleeding *quoad vires*, the calomel and opiate, the hot bath, warm clothing, and frictions spirituous or anodyne, form the chain of treatment in the European Hospitals here, and these are repeated again and again as the symptoms may seem to demand. Under this plan, and an early application for relief, I think the disease is not fatal in more than one in a hundred cases.

The following report is from Mr. Assistant Surgeon Campbell of the 22d dragoons, dated from Seroor. "The scruple dose of calomel with Corbyn's anodyne draught was given every two hours, but when the spasms and vomiting had ceased, the laudanum was omitted, the calomel continued, and the stimulants more frequently given."

The next report is from Mr. Assistant Surgeon Tod, dated Camp Chumargoody, August 8, 1818.

"The way I have administered medicine is by giving calomel, one scruple, and washing it down with *tinctura opii*, one drachm, and water, two ounces, and repeating them after an hour, if the first dose is rejected. I have sometimes left the interval of an hour, which generally succeeds; but I have, in a few instances, been under the necessity of giving it three or four times." In another place, this gentleman adds, "I have had altogether an hundred cases where the calomel and opium plan has been followed, and though ten or twelve have died, these were either such aged subjects that no rational hope of recovery could be entertained, or were brought in at such an advanced stage of the complaint as to be beyond the power of medicine."

Mr. Assistant Surgeon Milwood writes the next report, which is dated Ahmednugger, 2d August, 1818. "I will now give my treatment with my reason for the addition I have made to Mr. Corbyn's. There are two great objects to be attained for the recovery of the patient: 1st, to allay the vomiting and purging; 2ndly, to restore the pulse and heat of the extremities and produce sleep. In order to effect these, I have, in addition to one scruple of calomel, put five grains of antimonial powder, and added to the draught one drachm of *spt. æther. nitros.* In the course of two hours I give ten grains of calomel and five of antimonial powder, with half the draught which I prepare with cam-

phor mixture in place of plain water, and repeat this as it is required. The best laxative I have found to be carbonate of magnesia, four scruples. It remains on the stomach, and generally causes two or three plentiful evacuations.

Mr. Assistant Surgeon Richards reports as follows. Punderpoor, 3d of August, 1818. "Up to this morning the admissions amount to 170; out of which eight casualties have occurred." This gentleman bled, and used the calomel and laudanum doses.

To evince how essentially necessary bleeding is, Dr. Burrell sends the following return:

Bled . . .	88	Died . . .	2
Not bled . . .	12	— . . .	8
	—		—
Total admitted	100	— . . .	10
	—		—

I now come to Mr. Surgeon Longdill's report, dated Seroor, 17th of August, 1818. "My general plan of treatment was to give the dose recommended by Mr. Corbyn. If it was rejected, another was given, after waiting an hour, with the warm bath, which generally relieves the patients. After which they required little else but cordials and a gentle laxative."

Mr. Surgeon Robertson, of the European regiment, on the Bombay establishment, dates his report from Keerky, and states that bleeding relieved them, and that calomel and opium brought them quite round.

The report which succeeds is from Mr. Surgeon Gordon, dated Satara, 5th of September, 1818. "I sent you a report in which I stated that I laid considerable stress on free and early blood-letting. Since then I have had eleven cases, bled the whole of them, then opened the bowels, and they are all quite well.

Mr. Surgeon Coates reports to the President of the Medical Board, that "the practice followed in the treatment of this disease at Aurangabad was that recommended by Mr. Corbyn, and had been particularly successful; indeed, if the patient applied in time, it was considered as infallible.

Mr. Surgeon Jukes next reports, that "experience has now taught us that a very large proportion of those attacked by the disease, recover by the calomel and laudanum alone; but I feel satisfied that there are many aggravated cases wherein nothing but the most prompt and decided use of the lancet could possibly save the patient."

The next report comes from Dr. Taylor, a gentleman who had the principal practice in the disease

at Bombay. This practice is precisely similar to the foregoing; he gives the following return:

Medicine administered to . . . 7459
Of whom died 441
being a proportion of nearly six to an hundred.

The last report is from George Ogilvy, Esq. Secretary to the Medical Board, confirming the treatment already mentioned, and the reports are concluded with the following abstract of cases which occurred in the island of Bombay.

1817.	Cases.	Deaths.
August	4400	456
September	4804	287
October	2411	146
November	824	44
December	806	64
1819.		
January	889	114
February	517	27
	<hr/> 14651	<hr/> 1138

Proportion of deaths in those cases in which medicine was administered, 6.6 per cent. In the same space of time 1294 cases were reported by the police, in none of which medicine was administered, and it is a most important remark by Mr. Ogilvy, Secretary to the Medical Board, that

it was not ascertained that any case had recovered in which medicine had not been administered.

The population may amount to between 200,000 and 220,000. The number of ascertained cases was 15,945, which gives the proportion of the attacks of the disease to the population $7\frac{1}{2}$ per cent.

I believe I have now satisfactorily proved to you the efficacy of the treatment I recommended. I shall add the remarks of the Medical Board of Bombay, made after summing up the whole of the opinions regarding the proper mode of treatment to be adopted.

“ On the subject of the cure of the disease we need say but little. The practice so judiciously and speedily adopted by Dr. Burrell in the 65th regiment clearly proves, that in the commencement of the disease in Europeans, blood-letting is the sheet-anchor of successful practice, and perhaps also with the natives; in this I have entirely concurred in my printed report, but have there said nothing of this practice among the natives. I tried bleeding with the natives, but could get no blood from the arm, and finding every efficacy from the medicine I prescribed, I had no occasion to make a second attempt; but I have no doubt you will perceive from the principles on which I ground the cure, that the venesection is

advisable in all cases where blood can be obtained;" to proceed—"provided it can be had recourse to sufficiently early in the disease, and as long as the vital powers remain so as to be able to produce a full stream, it ought never to be neglected, it being sufficiently proved that the debility so much complained of is merely apparent. Calomel as a remedy certainly comes next in order, and when employed in proper doses with the assistance of opium, more particularly in the early stage of the disease, seems to be equally effectual among the natives, as venesection among the Europeans, in arresting its progress. In all the cases formerly alluded to, when we met with the disease in its first attack, a single scruple of calomel with 60 minims of laudanum, and an ounce of castor oil seven or eight hours afterwards, was sufficient to complete the cure. The practice of this place, as sufficiently appears from Dr. Taylor's report, bears ample testimony to the controul which calomel possesses over this disease. All other remedies must in our opinion be considered as mere auxiliaries, no doubt extremely useful as such, and ought never to be neglected, particularly the warm bath and stimulating frictions."

I trust, Sir, I have now performed my duty in giving you a full and accurate account of the nature and treatment of this alarming epidemic. I am still accumulating information, but in the mean time, as my object is utility and not emolument, I

beg you will give publicity to this letter, by procuring the insertion of it in that excellent work, the Transactions of the Medico-Chirurgical Society.

I am, my dear Sir,
Your very obedient Servant,

FREDERICK CORBYN.

To Sir Gilbert Blane, Bart.

Such is the account, for which we are much indebted to Mr. Corbyn, of a malady, which, viewed in all its bearings, is without a parallel in the annals of physic. Whether considered in the tragical details of its sufferings and fatality, the obscurity of its origin, the sagacious, energetic and successful practice by which it was opposed, or the singular circumstances of its rapid progress and its diffusion over so large a portion of the habitable globe, it is one of the most interesting and affecting objects that can engage the attention of mankind, particularly of the medical world.

Some conception may be formed of the intensity of the sufferings from what is commonly experienced of the torture from the cramp of a single muscle in the leg; for what must be the agonies of those in whom the whole muscles of the extremities and trunk are so affected, and what the superadded anguish of those in whom the breathing is impeded by a like affection of the muscles of

respiration, including the diaphragm, not to mention the stomach with other muscular and vital organs, all thrown into the like excruciating contractions! When to these are added the attendant symptoms of despair and prostration of mind, it will be difficult for imagination to conceive a more exquisite picture of human misery.

There is therefore great cause of gratulation to humanity, as well as much matter of triumph to the medical art, in means having been devised for stripping this disease, almost invariably fatal when left to nature, in a great measure of its terrors and danger, by the bold and combined administration of two potent remedies; the one possessing, along with an active evacuating quality, a powerful specific influence on the secretions; the other displaying those anodyne antispasmodic stimulating and exhilarating virtues, which render it one of the most indispensable instruments in the hands of the medical practitioner.

One of the first circumstances which strikes us in the history of this disorder, is the name it has acquired, the term *cholera* seeming to imply that it consists of a redundancy or depravity of the bile; whereas it appears that the secretion and excretion of the bile are entirely suspended, and that the matter evacuated by vomiting and purging is quite of a different character. This is an inaccuracy, however, into which the ancients, as well as the

moderns, have fallen, and is best elucidated by Alexander Trallian*. This ancient author describes three species of cholera. In the most intense, there is no evacuation of bile, and he thinks the name might more properly be derived from *χολαδία*, an old Greek word used by Homer, to signify the bowels, than from *χολη*, bile. In the species next in degree, however, he says there is a great discharge of bile, and being attended with excruciating spasms like the former, obtains the same name. The third species is a simple bilious diarrhoea without the spasms. In the disease, as it occurs in ordinary practice, in this country, most commonly in the month of August, after the canicular heats, one of the most prominent symptoms is certainly the discharge of a large quantity of bile, and seems to be the middle species of Trallian. Hippocrates says little of the nature of the evacuations, only that green bile forms part of them. Aretæus, in his description, says, that the evacuations are at first pituitous, and then of pure yellow bile. Celsus says, that matter of a white color is evacuated, sometimes black and of various colors; but he does not describe it with his usual precision, for he calls the white matter bile, using the term in the same vague sense as many persons out of the profession in our times, applying it to every morbid humor of the stomach. In the works of Sauvages, Cullen, and most modern authors, there

* Lib. VII. Cap. 14, 15, and 16.

seems to be a want of due precision and care in specifying bile as the only or chief matter evacuated. The cholera of Sydenham seems to come nearer to the intense species of Trallian and to the Indian epidemic than any other modern before Mr. Curtis*, and it seemed to prevail, epidemically, in England in 1669, and still more severely in 1676. He says nothing of bile, and characterizes the evacuated matters by the name of *pravi humores*. There seems, however, in all cases to be a propensity to a redundant and vitiated secretion of bile, for sooner or later it makes its appearance, though in the intense species of the disease the secretion of it is suspended in common with the urine and other secreted fluids; but on the disorder giving way, and the secretions being restored, large quantities of dark-colored bile are immediately observable in the discharges from the bowels, the tendency to its redundant and vitiated production having then scope.

Some of the Indian practitioners have been so much struck with the impropriety of calling this disease *cholera*, that they have studiously abstained from giving it this name. As a matter of philology, we certainly, by retaining this name, run the risk of falling into the same absurdity as the scholiast, who so preposterously derived *lucus a non lucendo*;

* See Account of the Diseases of India, as they appeared in the Fleet, in 1782.

but, on the other hand, we have the highest critical and classical authority in points like this, for implicitly submitting to established usage as the sole arbiter of speech, without regard to etymology. We will do well then to retain the old name, particularly as no other or better has been proposed by those who have laid aside the old one. Under this explanation it can lead to no mistake, ambiguity, nor error of practice; and as the most prominent character, next to the bowel affection, is the cruel muscular cramps, the epithet spasmodic is here added to it, omitting the word *morbus*, which was first employed to distinguish it from the metaphorical sense of the word as applied to a passion of the mind. If no name had hitherto been affixed to it, it might be denominated the *colica spasmodica maligna*.

Beside what has been extracted from the Bombay communications by Mr. Corbyn, there is little of importance, either in the description or practice. In some of the dissections there is more mention of congested blood in the veins of the intestines, and of the appearance of inflammation on the stomach, even to the effusion of coagulable lymph on its surface, in some subjects. This is what might naturally be expected, from the bloodless state of the extremities, and surface of the body; the circulation there seeming almost suspended, as appeared by the absence or weakness of the pulse, the extreme cold and shrinking, the mass of blood

being determined to the bowels; and this seems to account for the burning pain at the stomach, and the success of blood-letting. Some of the gentlemen in their descriptions seem to labor as if at a loss for language to convey an adequate idea of the shrinking of the limbs and trunk of the body, the shrivelling of the skin, the collapse of the countenance, and the sinking of the eyeballs. It would appear, that the total absorption of the *adeps* had also contributed to this, so great and rapid was the emaciation; and might not the thick white matter, so constantly described as discharged from the bowels, have been the contents of the adipose membrane, thrown on the bowels in the same manner as serous fluids are thrown on them from disease, or the operation of medicine?

We find in these documents also a very interesting and instructive observation regarding the comparative susceptibility of the Europeans and the natives. While thousands of the latter were perishing by the epidemic in a district near Bombay, only six European soldiers died of it. This forms a guide to the *prophylaxis*, namely, good nourishment, good clothing, shelter from the weather, and the avoiding of fatigue; these being the circumstances in which the natives and Europeans differ.

There also occurs an incidental remark, well worth recording, with regard to the dose of calo-

mel and laudanum, which may be safely and even beneficially administered. "By mistake twenty grains of the former, and sixty minims of the latter, were given at the interval of less than half an hour. The patient was inclined to sleep; nothing more was done, and in two hours and a half he was as well as ever he was in his life."

The farther remarks on the question of contagion are also deserving of notice. The following extract contains the opinion of the Bombay Medical Board on this subject. "On the 6th of August, 1818, it broke out with great violence at Panwell, a considerable village in the main line of communication between Poona and Bombay, separated from the latter by an arm of the sea, and distant from fifteen to twenty miles; but between which a pretty constant communication is kept up by means of boats. On the 9th or 10th of the same month, the first case appeared in this island, and, as is mentioned in Dr. Taylor's report, could be traced to a man who had arrived from Panwell the same day. It is also evident from Dr. Jukes's report, that it spread north and south along the sea coast from the same place, and that it was imported to a village in the neighbourhood of Tanah in the island of Salsette, distant from this place about twenty miles, by a detachment that escorted a prisoner from that garrison to Panwell. The disease did not break out at Muhim, on the extremity of this island, distant only five or six

miles from the principal native town of Bombay, until it had been established in the latter; it then gradually spread over the western side of the island to Salsette, through which the road from Bombay to Surat and the northern countries lies; and by which during the south-west monsoon, is the principal line of communication. By the observation of some individuals*, who, aware of the danger of the malady, and with the humane view of relieving the sufferings which it inevitably produced, carefully watched its progress, we are enabled to trace the disease as if creeping along from village to village on that island precisely in the same way, that is, by the arrival of people affected with disease from places where it was known to prevail; and we are assured that there are some villages in that island, which from want of this sort of communication, or from some other cause, have, after a lapse of four months, hitherto entirely escaped.

From the foregoing detail, which, to some, may appear too minute, we are disposed to conclude that this epidemic is not only different in its nature from those that have hitherto been observed; but that it may be said to stand alone, in regard to

* Amongst those, we have great pleasure in mentioning the name of ensign W. A. Tate of the corps of engineers, stationed on Salsette; who, among other arduous duties, paid the most unremitting attention to alleviate the suffering of a large portion of the population, and to whose humane exertions some thousand of the inhabitants owe their preservation.

some of the more essential characters which usually distinguish those diseases.

In the first place, it has prevailed to a degree equally violent at all seasons of the year; in regard to temperature, from 40 to 50 degrees of Fahrenheit to 90 or 100; in regard to moisture, during the continuance of almost incessant rain for months, to that dry state of the atmosphere which scarcely leaves a vestige of vegetation on the surface of the earth.

Secondly. Although what has been adduced may not appear to some to be sufficient evidence of the fact, it appears to us incontrovertible, that it is capable of being transported from one place to another, as in cases of ordinary contagion or infection, and also to possess the power of propagating itself by the same means that acknowledged contagions do, that is, by the acquisition of fresh materials with which to assimilate, at the same time perhaps, subject to particular laws, with which we may never become acquainted. Aware, however, of the doubtful nature of the ground which we tread, amidst the contrary opinions that have been advanced on this subject, we shall content ourselves with stating a few facts, which have been supplied by gentlemen, whose reports have been already printed, and which might be increased much beyond the limits to which we think it necessary to confine ourselves. In October last, when the

disease had almost disappeared at Tannah, the attention of Mr. Jukes was called to a case that had occurred in one of the apartments of the barracks of that fort appropriated to European troops; this, owing to too late application for medical aid, soon terminated fatally; another case occurred a few hours afterwards, the subject of which was saved with much difficulty and after much danger, and in the course of six succeeding days, no less than nine cases occurred in the same apartment. The curiosity of Mr. Jukes was naturally excited to ascertain under what circumstances so much disease was produced, and on examination, the ward appeared to be both badly ventilated and too much crowded with men; the place was immediately emptied, scoured, and fumigated, after which no other case occurred. Since the middle of December, when we had flattered ourselves that the disease was vanishing as the cold season advanced, the number of cases considerably increased in this island, Salsette and the Conkan, and consequently excited much alarm; in some instances these cases have been confined to particular spots, and sometimes to particular houses, where the disease has attacked and destroyed, in succession, whole families, consisting of three, four and five persons, while, in others, only a single case, or at most, very few have occurred. We are utterly ignorant of any local circumstances to which such a change can be ascribed; unless by supposing that a diminution of temperature, together with exposure,

may have called into action some latent remains of an active poison; otherwise it seems difficult to reconcile those facts with what is observed in ordinary epidemics. It will be observed that Mr. Jukes, in his report, remarks that the disease, as it at first appeared at Tannah, did not go through families when one had become affected. He has since seen sufficient reason to alter his opinion in regard to that particular; and we think that we observed in several instances, that the disease has shewn a greater tendency to spread, where the first attacks have proceeded in their course to a fatal termination, which they invariably do when not counteracted by medicine. How far the same thing has been observed to happen in other epidemics we cannot determine.

The next testimony on this side of the question is that of Dr. Burrell, who says, in his report dated Seroor, July 27, 1818: "As every epidemic, by accumulation of subjects, has a tendency to propagate its *virus*, I am cautious in reporting this disease not infectious. Almost every attendant in the Hospital, in the short space of six days, has had the disease. There are about thirty attendants in the Hospital."

In proof of the contrary opinion, the authority of Mr. Assistant Surgeon Whyte may be cited, who, in his report dated Seroor, Sept. 7, 1818, says, "Convinced as I am of the total absence of

contagion in this disease, I have observed the late revival of this opinion with some degree of pain. Surely, if it was at all contagious, the fact of its being so could not remain long doubtful. In the general hospital here, there were three Sepoys, who resided continually from the first appearance of the epidemic, inhaling by day and night at every inspiration, mouthfuls of the infection. If the atmosphere was really loaded with contagious effluvia arising from the bodies of the patients in the hospital, the escape of these men (which has been complete) would be miraculous, indeed; living, as they were, in the very midst of these *effluvia*, and so near their source. Allowing that the constant habit of doing so procured them an exemption from the influence of contagion, the same thing cannot be said of the friends and relations who were attending upon the patients, and of six dooly bearers, changed daily, and who used to assist the sick into and out of the bath, and in every other way; thereby exposed to be infected by the disease, whether it is conveyed through the medium of the atmosphere or by touch; yet I have not known one instance of dooly bearers, friends and attendants of the sick being so infected, nor have any of our hollalchones or hospital assistants suffered."

The next extract shall be from the letter of Captain Sykes to Dr. Milne, dated Punderpoor, 15th of August 1818; and as this is mere matter of

evidence, upon which persons of good sense out of the profession are competent to decide, (perhaps not the less so that they are not biassed by any theory or preconceived opinion) some weight is due to it. "With respect to the origin and nature of the malady, I am incompetent to give an opinion; but that its progress is independent of the air, I think there are many circumstances to justify the belief. In the first place, we see that it has made its way independent of a permanent S.W. wind from Jaulna down to Punderpoor. Its effects were not instantaneous in the country; but its progress may be traced, by a slow advance, to from 15 to 29 miles a day, as if it had been communicating gradually by persons travelling from town to town. Its principal ravages about here appear to have been confined to the high roads leading from Punderpoor and the large villages in the neighbourhood, and I dare say it might be proved that it did not break out in any village, until that village had communicated with a neighbouring place in which the disease existed. Corroborative of this, are the observations I made at Natapoota of the 17th of July. That day I descended the Mahadoo ghaut from the town of Singnapoor, in which the disease was unknown, and marched six miles to Natapoota; where the plague had that very day made its first appearance. It first appeared in Punderpoor on the 14th, so that it had taken three days to travel 40 or 50 miles to Natapoota. There are other circum-

stances also to justify the belief that it is contagious. In my light company there were three or four men taken ill at once; of course there were attendants from the same company upon these men. The disease went on increasing in that company, and there have been more cases of cholera in it than any other. One of my servants was attacked: it gradually extended to five. An officer at Punderpoor had seven servants attacked one after the other; the gentleman in the next tent had not one. I have seen a similar instance in our corps. I should infer therefore, from its running in particular companies of a corps, or sets of servants, that, as they attend on each other, and constantly sit or sleep in the confined space of a small tent, the disease is communicated by absolute contact, or from respiring the same air that a diseased person has done. I am aware that there are very strong arguments against its being infectious, persons escaping who have been in constant habits of handling the sick and breathing the air of the cholera hospitals."

Mr. Surgeon Coates, in a letter to the President of the Medical Board at Bombay, says, "At Tokah we were visited by a gentleman from Aurungabad, who brought us accounts of the disease raging in that city; but the idea was, that it had been brought from Jaulnah where it now also raged, and that its progress through the villages in the post road from Nagpore to that station could

be distinctly traced." In another part of his report he says, "From the above facts and others which have been related, I consider the disease infectious; but though this opinion should be well founded, it ought to occasion no alarm, for it is only under some peculiarity of constitution, and that fortunately very limited, that the poison acts. About 1 in 40 in our camp was attacked, and I should think this is above the usual proportion. If the disease were occasioned by a distempered state of the atmosphere, it would have spread over the country with some sort of regularity, but it seems generally to have travelled in lines along the post roads, and always to have required a succession of subjects for its propagation. In Candeish, where there is not sufficient population, and but little intercourse between the villages, its progress was slow. At Punderpoor it made its appearance at the time of the great Jatra, and was spread at once in all directions by the pilgrims returning to their homes; the number of deaths here was 3000 in a few days. The patients are described as being knocked down as if by lightning. We know nothing of the state of the body which predisposes to the disease. "Mr. Coates mentions a circumstance at the conclusion of his letter, which leads to the idea of the infection lying dormant for some time as in the case of small-pox. He says, I might have mentioned that all the subjects predisposed to the disease, seemed to have been attacked at the places where it appeared within ten or twelve days."

The last extract relating to this subject, shall be taken from the report of Dr. Taylor to the Medical Board of Bombay, dated 16th of Nov. 1818. "Whether the disease be contagious, or a simple epidemic produced by some peculiar state of the atmosphere, is a question which has been a good deal agitated. The course which it has pursued from one extremity of India to the other, unchecked by different states of temperature, and by great variations of seasons; its proceeding even against the powerful monsoon winds, and its having been traced moving along the high roads from place to place, have been urged as proofs of its contagious nature. The manner in which it was found to have originated and to spread at this place, lends some probability to the same opinion. Its introduction to Bombay has been clearly traced to a person who came from the Deccan, and passed through Panwell when this disorder was raging there; and it has been observed here, that whenever it appeared in any particular spot or family, a considerable proportion of the family, or of the neighbours, were attacked within a very short period of each other; on many occasions I have seen three or four of a family lying sick at once. In bringing forward these facts, however, it may be proper at the same time to state, that of the 44 assistants employed under me, only three were seized with the complaint.

The communications from the Mauritius, come next to be considered. It appears by a report made by the principal medical officer there to the President of the Medical Board of the Army, that the disease first shewed itself here on the 20th of November, 1818, and continued to prevail, though with considerable abatement, till the 18th of December, when the last accounts came away. In that time sixty-nine cases had occurred in an army consisting of 1472 men, of whom fourteen had died. It appears by a communication made to the writer of this, by a gentleman high in the Civil Service of the Government, that from the time of its breaking out till the date of his letter, December 18th, the number of burials during the same period was 700. The ordinary average was from 90 to 120 in the same space of time. This is independent of the deaths in the country districts, which have been very numerous. By still more recent accounts it appears that the total mortality in the island amounted to several thousands, and that the number of cases in the army, from the 19th of November, 1818, to the 4th of February, 1819, was 269; of whom, 235 were discharged; 31 died; and 3 remained. Here, as in India, by far the greatest proportion of seizures took place in the laborious classes of the population. Only twelve of the white inhabitants had died of it; but this class of the population lost not a moment in removing from the town on the first alarm, and every

precaution was taken as if the disease had been contagious.

With regard to the practice, opium and calomel were administered to the cases in the army, but in smaller doses than in India. Little is said of the civil practice, except that one of the French practitioners stated that he found great benefit from the administration of repeated doses of two drachms of the sulphate of magnesia. It has been already mentioned that the mortality in the civil hospital was 94 in 133 admitted. The deaths in the town by the report of the French practitioners were 194 in 440 admitted. By comparing these statements with those in India, it will be seen that the success was much greater in the latter.

There was here the like difference of opinion regarding the contagious nature as in India. The principal medical officer denies its being contagious, and ascribes the appearance of the disease to the unusual degree of atmospheric heat. Another medical officer is of opinion that it is contagious, and that it fell most heavily on the attendants of the sick. From the great alarm of the inhabitants, it is evident that they were impressed with the same belief, and did not doubt that it had been imported by the *Topaze* frigate, which arrived at Port Louis on the 29th of October from Ceylon, where it prevailed. Of 17 who

were taken ill of this disease on the passage, 3 died, by the report of the surgeon, beside two previously; the whole number of deaths by that disease being stated at 5 on board for the preceding 18 months.

It is of the utmost importance that the question regarding the infectious nature of this malady be decided. The facts and the arguments on both sides of the question have been fully detailed. It has been already observed, that if it is not contagious, and that the general belief should prevail of its being so, the most serious distress and inconvenience would arise, from the dereliction of the sick, to which it would give occasion. But on the other hand, the mischief would be infinitely greater, should it be really infectious, and the contrary opinion prevail. It is evident that the settling of this question must be of the most grave, serious and vital moment to the community, and to the character and feelings of the medical practitioner, to whose opinion the world at large naturally look up, and from whose decision, if erroneous, the most direful calamities must ensue. It is indeed hardly possible to conceive a higher and more sacred responsibility to exist, for upon such decision hangs the fate of thousands, who may, by a mistaken opinion, perish of a disease perhaps the most excruciating in the whole catalogue of human maladies, not to mention that the peace of mind of the individual who pronounces the sen-

tence, as well as the credit of the profession at large, is deeply involved in the opinion he may deliver.

The main argument of those who maintain non-contagion is the exemption of the great numbers who are exposed to breathe the *effluvia*, and to the contact of the affected subjects. To those who employ this mode of reasoning, there are two considerations which seem to have escaped their attention. The one is, that the same principle will apply still more strongly against its being derived from a general atmospheric cause, whether this is made to consist in a higher degree of temperature, or in some contamination from the exhalations of the soil or other cause. For it is evident, that as all must breathe the same air, all ought to be seized; whereas it is possible that many may avoid inhaling the morbid *effluvia* of the sick, which is so much more partially diffused. Those who have remained exempt, must have been equally exposed to the cause as those who are taken ill, if that cause proceeds from the soil or the atmosphere, or any other universally diffused cause, such as must exist if contagion is denied.—The other circumstance not adverted to, is, that in no case of epidemic disease, however distinctly depending on the morbid poison of the sick, is the whole population affected in the same manner. If this were not the case, the plague or small-pox would long ago have extinguished the human species, whereas great

numbers who are taken ill of both, escape with their lives, and others entirely resist the infection. It is clearly stated in some of the testimonies already recited that, except in the hard-living part of the community, only a small proportion of those exposed, were susceptible, from some inscrutable modification in their constitutions, and it appears that after all the susceptible had been affected, the disease abated, and speedily disappeared.

The circumstance which most obviously discriminates an epidemic arising from the morbid poison engendered in the human body, that is contagion, from those which arise from affections of the atmosphere, whether consisting in alterations of temperature or in contaminations from the soil, is that the progress of the former will necessarily be *progressive* and traceable to human intercourse, whereas the influence of the latter will as certainly be *contemporaneous* in situations more or less distant. It will be clearly perceived, by a careful perusal of the preceding history, that the spread of this malady has been strictly progressive, and evidently carried by human beings from one district to another; nor is it conceivable that those requisites of temperature and contamination of the atmosphere, could have occurred by mere accident at those spots and periods in which the disease shewed itself in its progress by sea and land, as historically ascertained in the preceding narrative.

This is no where more striking than at the Mauritius. This island is near 3000 miles from the other places at which the epidemic raged; and can any mind be so constituted as to believe that a new disease of the identical nature with that which had ravaged all India, should have shewn itself by mere accident at the very time when its appearance was in exact conformity with the supposition of its being imported by the frigate? For let us suppose that the inhabitants of the Mauritius were all, or most of them, susceptible of the small-pox from the long absence of that epidemic, and that a ship should arrive in which several cases had recently occurred, and from which thirty of the sick were landed, and a free intercourse admitted, as stated in the transmitted accounts, it would break out about the same distance of time, that is about three weeks after the arrival of the ship, for no subject might be exposed to the morbid *fomites* for a week or two, and the infection would remain in the system for ten or twelve days, a circumstance common to these two epidemics, and which took place with regard to the cholera after the arrival of the *Topaze*. This subject indeed cannot be better illustrated than by running a parallel between the actual progress of this epidemic and the usual course of small-pox. Let us put the case that small-pox had been introduced into Calcutta in August, 1817, and that the whole of India had been so long a stranger to it that all the inhabitants were in a suscep-

tible state, would it not take exactly the same direction and propagate itself in the same manner as we have seen the cholera to do? It would extend itself to that quarter in preference to any other in which the greatest human intercourse was going on, that is towards the North-West, where the affairs of government and commerce, and above all, at that period, to the quarter where the Grand Army was assembling, on the banks of the Jumna. This was the route which it actually did take, and the like causes carried it into the Deccan, and from thence to each side of the Peninsula of India, where the communication of human beings was going on, and advancing most rapidly where this communication was most frequent, reaching at last the sea-port towns on the Coromandel coast and the island of Ceylon, where having got on board of ships it was transported over seas and oceans to the continents and islands to which these ships were destined.

It farther resembles the small-pox in the subtleness of its communication, the infectious matter of both seeming more volatile than that of the plague; for though we have been able to trace it on the great scale, it has been found occasionally like the small-pox to break out in spots a few miles distance from the known seat of contagion without its being possible to trace it. It is to be regretted that the same circumstance renders it extremely difficult in the case of both diseases, to take measures however

judiciously framed and vigilantly executed, which shall be effectual in preventing their introduction.

The only other hypothesis that has been devised to account for the remote cause of epidemics in general, besides the exhalations of the soil and the infectious effluvia of the living body is that which was suggested by Sydenham, of subterraneous mineral effluvia arising from time to time. This has been actually alluded to by one of the medical officers of India as a probable conjecture; but not to mention the untenable ground of an assumption purely gratuitous, and neither supported by fact nor countenanced by analogy, it may be asked how it is conceivable that these effluvia could exhale from the earth in the progressive manner in which this disease extended itself, and how will it account for its appearing on board of ships at sea, or at remote spots where these ships arrived, the Mauritius for instance, 3000 miles distant from India, while it was unknown at the Isle of Bourbon, a small neighbouring island in the middle of the same ocean, in the same atmospheric stream of air, being situated about thirty leagues to leeward of it? And we may here take occasion to mention that intelligence has just been received in England through the French journals, that a ship arrived at one of the ports of France on the 9th of May, in ninety days from Bourbon, which she must have left therefore on the 10th of February, at which time the disease had not appeared in that island,

and that a strict quarantine had been instituted from the moment it was known to have shewn itself at the Mauritius about three months before*.

* Since this sheet was sent to the printer, intelligence has been received from the Mauritius, dated the 21st of March, from which it appears that the epidemic had then entirely ceased there, and that a ship had arrived the day before from Bourbon, with accounts of its having appeared there in spite of the precautions, but had been confined to the town, and had ceased when the ship sailed.

POSTSCRIPT.

Read June 6, 1820.

SINCE the preceding article was read to the Society, intelligence has been received of the introduction and spreading of this malady in Ceylon; and the Medical Board of the Army having with its accustomed liberality communicated it to the Society, we shall extract what is most new and important.

Dr. Davy, an ingenious medical officer, already favourably known in the scientific world, mentions in his report that it had prevailed there from January 1819 to June of the same year; that it appeared quite unconnected with the direction of the wind, with the dryness or moisture of the air, with heat or cold, with elevation or lowness of situation, with great salubrity or unhealthiness of climate, nor with any sensible changes in the state of the atmosphere. He remarks, that there was in some of the cases which he dissected, a flaccidity of all the muscular parts after death, as in animals killed by electricity or hunted to death; there was also a tenderness of the muscular fibres.

He remarks too, that there was no difference in the colour of the arterial and venous blood, both being of the dark hue of the venous; and there was no instance of a buffy coat on the blood that was drawn. He analysed the expired air of the sick, and found that it did not contain more than one-third of the carbonic acid contained in the breath of healthy subjects.

Mr. Finlayson, another medical officer of great diligence and accuracy, observes, that it first appeared at Jaffnapatam, the most northerly sea-port of Ceylon and nearest to the continent of India, with which it is in constant intercourse. From thence it spread to the southward along the coasts and into the interior of the island. He observes, that there were some symptoms varying from those described on the continent of India, and describes a class of cases distinct from the ordinary form of the disease. In these the spasms were much less frequent, and some expired in a few hours, without exhibiting any of the characteristic tokens of the disease, except an extreme prostration of strength. There was also great thirst, and in some a greedy appetite for food. The warm bath and all other warm applications were extremely distressing and insufferable to them; all medicines seemed rather hurtful than beneficial. There seems something in this analogous to what we learn of the plague, in which some persons drop dead in an incredibly short time after being exposed to its infection,

particularly to that by *fomites*, conveyed in bales, which is alleged to be more virulent than the recent contagion from the sick. There was also something peculiar found on the inspection of the bodies of those who died under this form of the disease, namely, great congestion of blood in the brain, insomuch that it had the appearance of being enveloped in a layer of dark coagulated blood, or by a diffuse and general ecchymosis, and in some cases, when it was cut into, large quantities of blood gushed from it, and from the *theca* of the spine. In the ordinary form of the disease, this appearance was not found, the blood in these being accumulated in the abdominal viscera. Indeed, all the descriptions here and elsewhere, concur in stating, that the whole circulating fluids retreated as it were from the surface and extremities, so that the entire mass of blood was determined on the vital parts. The blood was found to be fluid, so that it was necessary to open the great vessels with caution in order to prevent the inconvenient effusion of it. In several cases, the surface of the heart and pericardium was lined with a green coloured gelatinous fluid. In some cases no fluid was found in the *pericardium*, in others as much as an ounce and a half. There was found a dark coloured fluid in the stomach, and a colourless fluid in the rest of the intestines, which he says were blanched like tripe. All these appearances belong to the cases of early death that have been described.

When the disease proved fatal in the advanced state, there were extraordinary congestions of blood, and great turgescence of the vessels in the intestines; there was in no case coagulable lymph; there was no change in the liver; the gall-bladder was full of bile of the ordinary appearance; the arterial and venous blood was nearly of the same dark colour, a fact which seems to be connected with the observation of Dr. Davy, of the expired air containing only one-third of the healthy quantity of carbon, two-thirds being retained in the blood.

The total number of cases in the army on this station, from the 21st Dec. 1818 to the 21st Dec. 1819, was 477, of whom 274 were discharged, 203 died. Mr. Assistant Surgeon Whitfield reports, that of 19 gun lascars who fell under his care at Colomba, from 21st to 28th of February, 9 died and 10 recovered, and of 65 inhabitants of Negombo from 23d March to 1st of April, 9 died, 56 recovered. His practice was to bleed, and to give "opium in a solid form with or without calomel." Mr. Staff Surgeon Marshall reports from Kandy of the 1st of August 1819, that of 50 cases which occurred, 40 died. "Calomel," he says, "was given in a number of cases in scruple doses, and in some cases this dose was repeated every hour or every second hour. Tincture of opium was in some cases given freely; stimulants, such as æther, ammonia, spirits, &c. were given in different quan-

ties, and repeated according to circumstances, in almost every case." Mr. Surgeon Parker of the 19th regiment reports, that of 31 seizures in that regiment, 9 died. His practice consisted in very large bleedings, external warmth, and the free use of calomel and opium. The only singularity in the treatment was the administration of ox-gall on the principle of supplying the want of that secretion. It produced no visible effect.

Upon the whole it appears from the different reports, drawn up with great ability by the medical officers in Ceylon, that this disease assumed here a more malignant aspect than on the continent of India, as appears by that form of it described by Mr. Finlayson, in which either the cause was so violent, or the powers of life so deficient, that they could make no resistance to it, even when fortified and stimulated by the most powerful cordials and medicine. In the ordinary cases also, medical means seemed less efficacious than in India.

The following singular appearances occurred to Mr. Finlayson in two subjects, the one a Caffre, the other a Malay. The former died twenty hours after the first seizure, the complaint baffling the most powerful remedies. In fifteen minutes after he expired, the fingers of the left hand were observed to move, then the muscles of the inside of the same arm were contracted in a convulsive manner, and the like motions were slowly propagated upwards to

the pectoral muscles. The muscles of the calves of the leg contracted in like manner, bundles of their fibres being drawn together in a tremulous knot. The muscles of the inside of the leg and thigh were forcibly contracted in a vermicular manner. The muscles of the face and lower jaw were similarly affected, and finally those of the right arm and right pectoral muscle. These motions increased in extent and activity for ten minutes, after which they gradually declined, and ceased twenty minutes after they began.—The other died fourteen hours after seizure, the most powerful remedies having been administered without effect. About fifteen minutes after he expired, the toes began to move in various directions, and the feet were made to approach each other. Muscular contractions were speedily propagated upwards along the inside of the legs and thighs. The thighs were turned slowly inwards so as to approach each other and again outwards, the whole of the lower extremities moving on the heels as on pivots. These motions proceeded upwards producing a quivering in the muscles. In five minutes the upper extremities began to be similarly affected, the fingers were extended, and often rigidly bent inwards: pronation and supination of the hand were steadily though slowly performed. The same quiverings were observable as in the lower extremities, and extended to the *pectoralis major* muscles and the superior margin of the *latissimus dorsi*. The muscles of the face moved and the

head was observed to shake. The total duration of these appearances was half an hour. By moving or pricking the arms or limbs, these contractions were rendered stronger, and again renewed where they had ceased.

It is remarkable that the abdominal muscles were not affected in either of these subjects. The bodies of both were examined. The appearances in the former were entirely those of the subjects before described, who died after a very short illness, the congestions of blood, which were enormous, being confined to the brain. In the other, though the chief congestion was in the brain, the vessels of the thorax were also gorged with blood, but no determination of it on the intestines. The lungs of the first were heavy and dense, but swam in water.

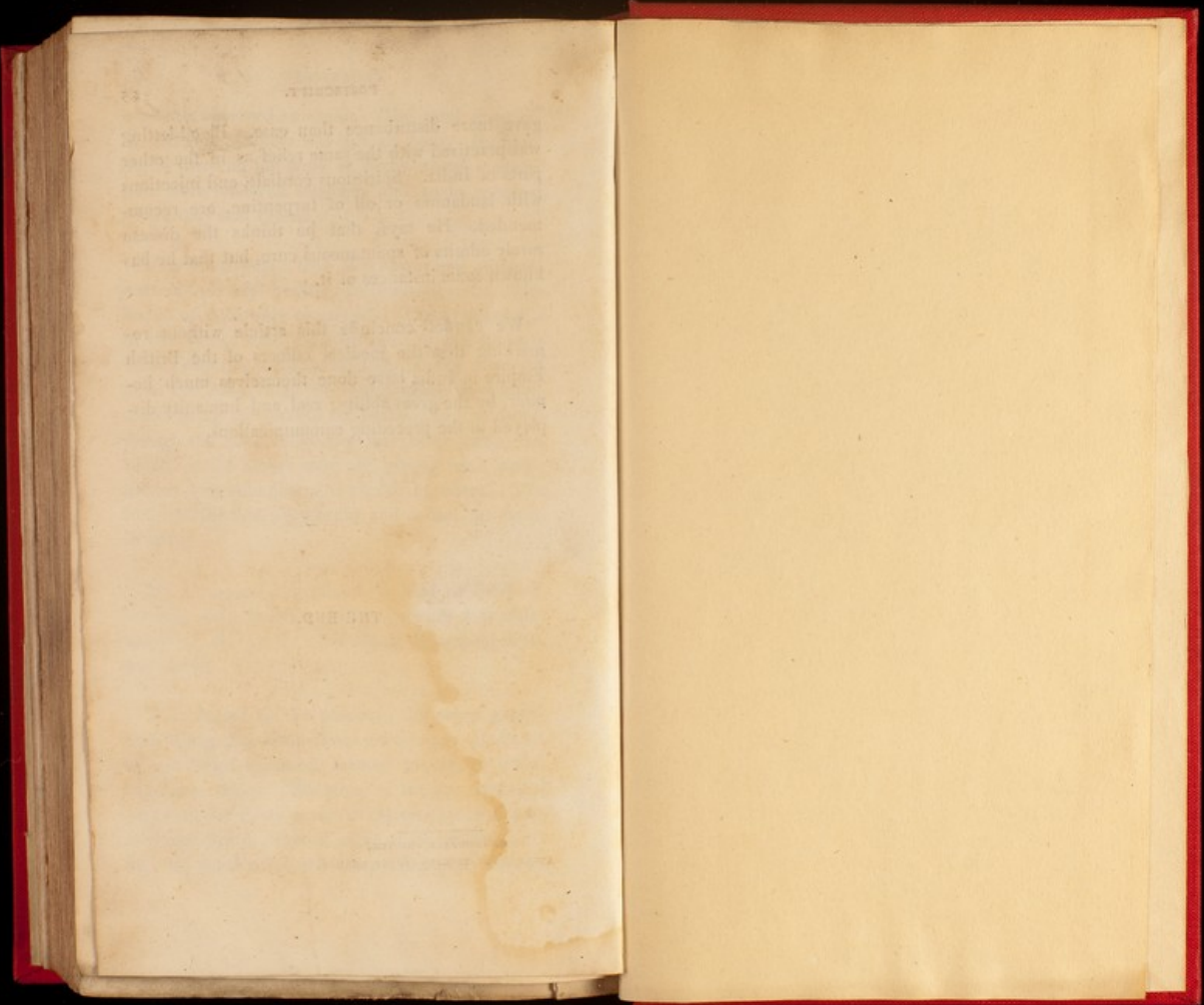
Mr. Finlayson ascertained the heat of those labouring under this disease, by applying a thermometer to the axilla. He found it varying from $92\frac{1}{2}^{\circ}$ to 97° .

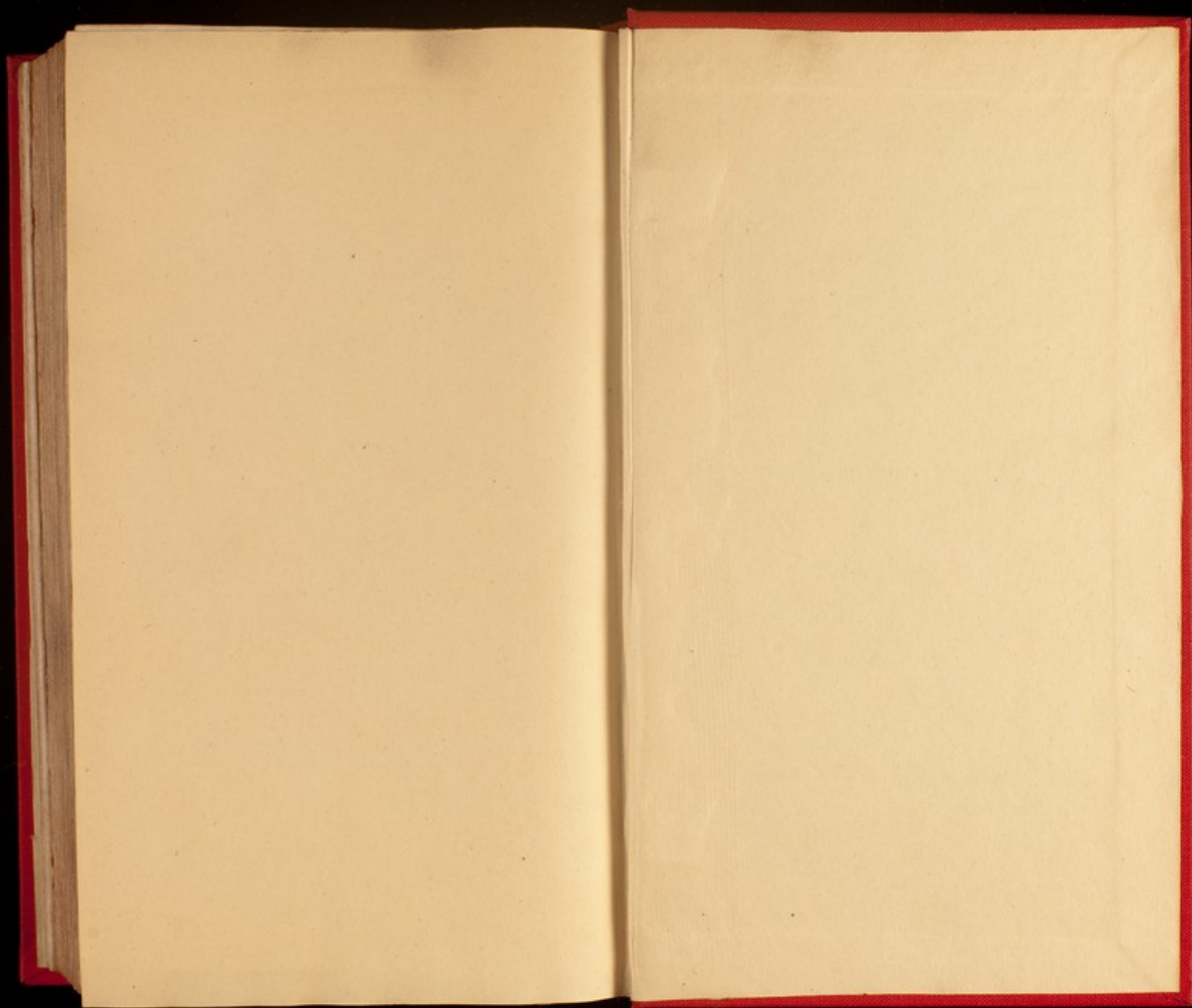
With regard to the practice, the same gentleman states, that small doses of tincture of opium of ten drops repeated, seemed to answer better than large doses. The stress of the cure was laid on twenty or thirty grains of calomel given at first, and repeated in doses of eight or ten grains every second, third or fourth hour. External frictions

gave more disturbance than ease. Blood-letting was practised with the same relief as in the other parts of India. Spirituous cordials, and injections with laudanum or oil of turpentine, are recommended. He says, that he thinks the disease rarely admits of spontaneous cure, but that he has known some instances of it.

We cannot conclude this article without remarking that the medical officers of the British Empire in India have done themselves much honour, by the great ability, zeal and humanity displayed in the preceding communications.

THE END.





PL

PAMPHLETS

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