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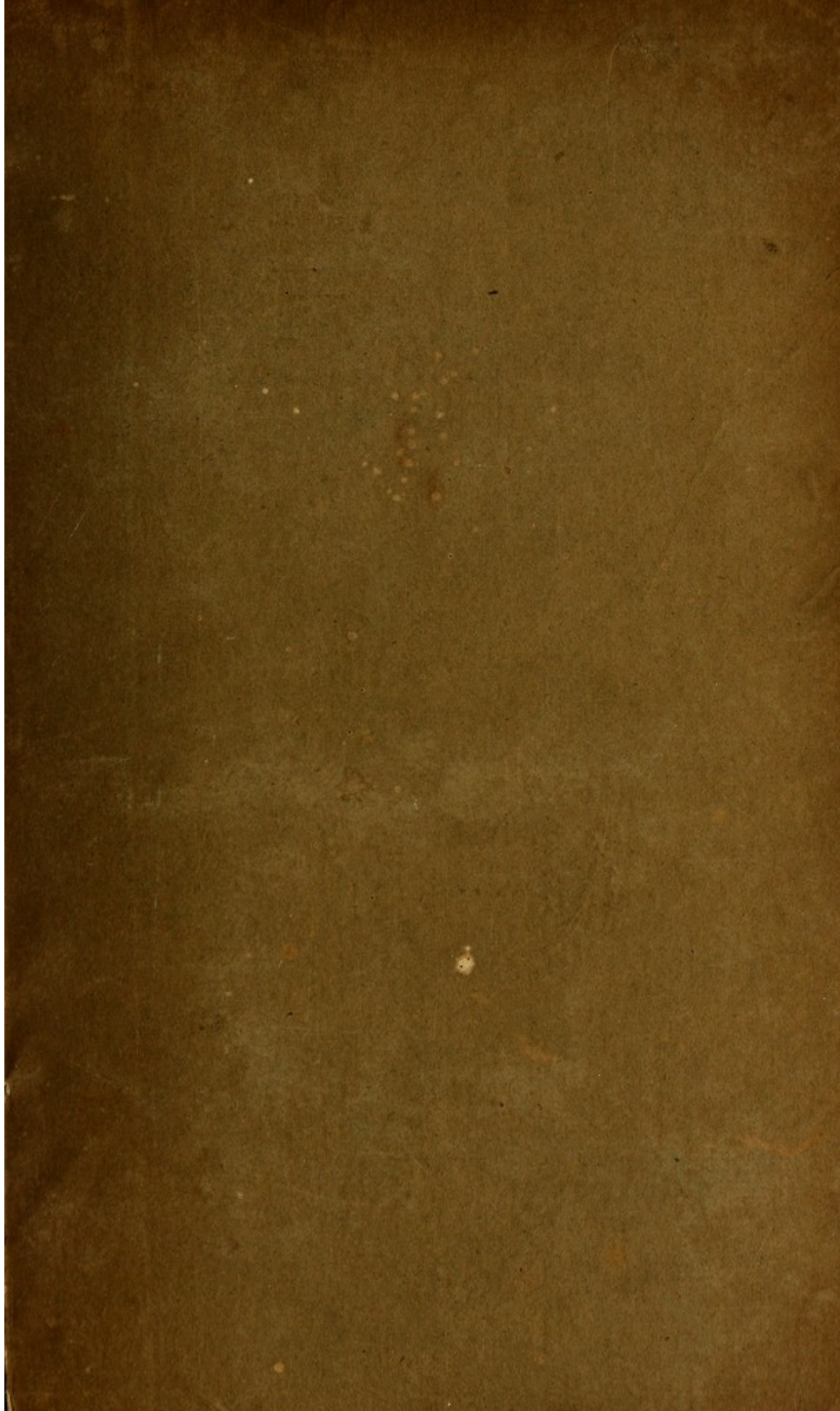
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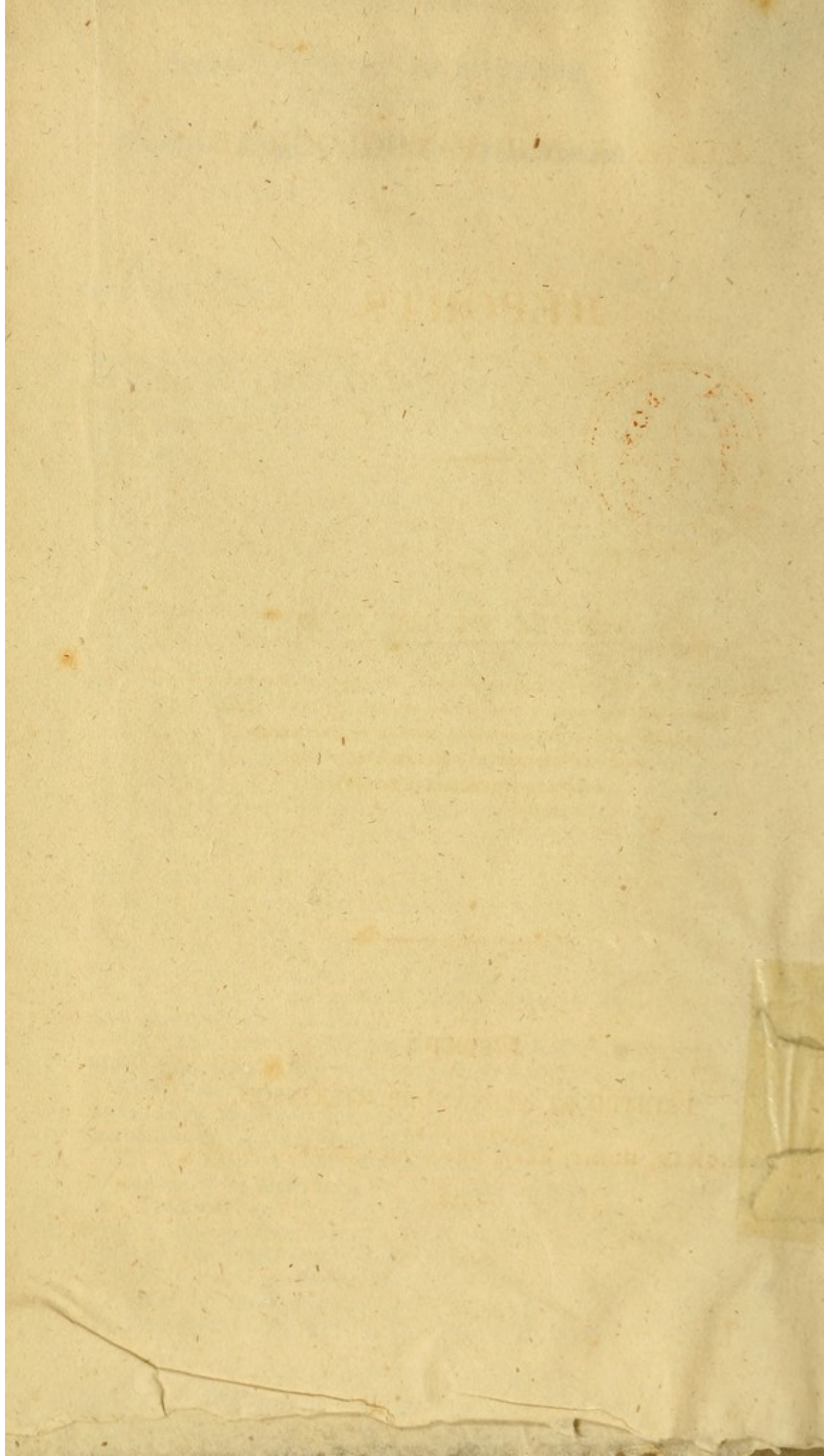
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CLINICAL AND PATHOLOGICAL
REPORTS.



BY

SAMUEL BLACK, M. D.

MEMBER OF THE KING'S AND QUEEN'S COLLEGE OF PHYSICIANS—OF THE ROYAL
IRISH ACADEMY—AND OF THE ROYAL MEDICAL SOCIETY OF EDIN-
BURGH—AND A CORRESPONDING MEMBER OF THE ASSOCI-
ATION OF FELLOWS AND LICENTIATES OF THE
COLLEGE OF PHYSICIANS IN IRELAND,



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1819.

CLINICAL AND PATHOLOGICAL

REPORTS

THE PRESIDENT AND MEMBERS

OF THE

ASSOCIATION

OF PHYSICIANS AND SURGEONS OF THE KINGDOM
OF GREAT BRITAIN AND IRELAND

SAMUEL BIRCK, M.D.

THE ASSOCIATION OF PHYSICIANS AND SURGEONS OF THE KINGDOM
OF GREAT BRITAIN AND IRELAND
1592

THE ASSOCIATION OF PHYSICIANS AND SURGEONS OF THE KINGDOM
OF GREAT BRITAIN AND IRELAND
PRINTED BY ALEXANDER WILKINSON

THE ASSOCIATION OF PHYSICIANS AND SURGEONS OF THE KINGDOM
OF GREAT BRITAIN AND IRELAND

TO
THE PRESIDENT AND MEMBERS

OF THE

Association

OF FELLOWS AND LICENTIATES OF THE KING'S AND
QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND.

I TAKE the liberty of dedicating to your learned Association this volume of Clinical and Pathological Reports, three of the articles of which originally appeared in your Transactions.

Your Institution has tended to connect the members of the Profession more closely together; and your Transactions have opened a channel through which the talents, the erudition and the experience of the Profession in this country may find an easy and unobstructed course: effects likely to be attended with infinite advantage to the medical literature of Ireland.

I embrace with pleasure this opportunity of testifying my respect for your Association. During a short

residence in Dublin, I received from many of its members personal attentions, of which I have a grateful recollection; and you have since done me the honour to enrol me among your corresponding members.

Accept, gentlemen, my sincere acknowledgments and best wishes.

SAMUEL BLACK.

Newry, May 20, 1819.

PREFACE.

THE progress of science at different periods and the contemplation of the causes by which its improvement has been advanced or retarded, are subjects not merely of liberal curiosity but of the highest interest to the inquisitive or reflecting mind. For many centuries, none of the sciences seems to have advanced at a slower pace than that of medicine. The discovery of the immortal Harvey, promulgated about the year 1620, and the important one of Pecquet not much more than thirty years afterwards, gave a new complexion to physiology and of course to medical science. Indeed it is much within this period that medicine has been cultivated on that system which can alone lay any sure foundation of knowledge, I mean the system of generalization deduced from observation and experiment. It is impossible to look back on the state

of medicine and of its ever fluctuating doctrines without being forcibly struck with the inutility, the unprofitableness and the emptiness of mere theory, and indeed of all speculations not bottomed on experimental truth.

Stahl considered that the soul, in consequence merely of its intelligence, and without any physical necessity, exerted a superintendence and control over the movements of the animal economy.

Boerhaave introduced the doctrine of a spontaneous gluten and of lentor and viscosity of the fluids.

Hoffman endeavoured to establish the ideas of atony and spasm, with a considerable intermixture of the mechanical and chemical doctrines then in vogue.

Of the opinions of Hoffman, Cullen has made a very liberal use.

Darwin comprehended all diseases under four classes, viz. diseases of irritation, of sensation, of volition and of association.

Brown considered the human body as a machine endowed with a certain essence which he named excitability. This excitability, acted on by stimulants from without or

from within, such as food, drink, heat, passions, &c. gives rise to the phenomena of life and of disease. Life in fact appears to be a flame supported by a constant supply of fuel.

These opinions, it is obvious, are of the nature of hypothetical assumption, and have not, I much fear, had any very strong tendency to improve medical science. I am far from saying that these illustrious men have not improved the state of medicine. I only allege that they have not done so by means of their theories. The accurate descriptions and faithful records of the phenomena of disease which Dr. Cullen has left behind him, constitute an improvement of the most valuable kind; and his great effort at a methodical arrangement and scientific classification of diseases, however imperfect, leads necessarily to an exercise of discrimination that has a powerful tendency to improve the knowledge of the subject.

If we look to the progress of another science within the same period, nay, within the last half century, we shall find it to be such as has never been equalled in the history

of human affairs: I mean chemistry. The means which it has afforded us of explaining or comprehending many of the grandest operations of nature, as well as many of those that were before considered as the most secret and impenetrable, are truly wonderful: and it seems by no means an extravagant presumption that by pursuing the same path, it will ultimately lead us to such an acquaintance with many of the processes of Nature, as yet "to us invisible or dimly seen," as may enlarge the boundaries of human knowledge to an extent of which we can at present form no conception.

It appears then that these sister sciences have advanced with an unequal pace. Into the causes of this it is interesting to inquire. Fortunately they are obvious and palpable. Chemistry has been cultivated entirely in the way of experiment and observation. The stock of facts which it has accumulated is unlimited and every day adds to their number and importance. Thus chemists have no inducement or necessity to indulge in any speculations except such as are matters of inference: and hence it happens that the

doctrines of chemistry are founded on an imperishable basis ; that basis

————— Quod nec Jovis ira nec ignes
Nec poterit ferrum aut edax abolere vetustas.

The improvements which medicine has received in these later times are to be referred entirely to a similar mode of cultivation.—As far as its professors have exerted their ingenuity in constructing brilliant theories or in dressing up fanciful speculations, their efforts have been in a great measure thrown away. But so far as they have employed their talents in the observation, collection and arrangement of useful or important facts, whether those facts relate to the history of health or of disease, or to the powers of remedies, to this extent they have rendered a real and important service to the science they cultivate. It appears to me that the physician who ascertains half a dozen of important facts, performs a more valuable, though a less splendid achievement, than he who invents a dazzling theory. The penetrating and comprehensive mind of Lord Bacon discerned the utility and appreciated

the importance of this mode of cultivating medicine. In enumerating the defects which, he saw, appertained to this subject, he mentions “ Intermissio diligentiae illius Hippocratis, utilis admodum et accuratae, cui moris erat, narrativam componere, casuum circa ægrotos specialium, referendo qualis fuisset morbi natura, qualis medicatio, qualis eventus. Atque hujus rei nactis nobis jam exemplum tam proprium atque insigne, in eo scilicet viro, qui tanquam Parens artis habitus est, minime opus erit exemplum aliquod forinsecum ab alienis artibus petere; veluti a prudentia Jurisconsultorum, quibus nihil antiquius quam illustriores casus et novas decisiones scriptis mandare; quo melius se ad futuros casus muniant et instruant. *Istam proinde continuationem Medicinalium narrationum desiderari video; præsertim in unum corpus cum diligentia et judicio digestam. Quam tamen non intelligo ita fieri debere amplam, ut plane vulgata et quæ quotidie obveniant (Id enim infinitum quiddam esset, neque ad rem) rursus tam angustam ut solummodo mirabilia et stupenda (Id quod a nonnullis*

“factum) complectatur. Multa enim in modo
“rei et circumstantiis ejus nova sunt, quæ
“in genere ipso nova non sunt. Qui autem
“ad observandum adjiciet animum, ei, etiam
“in rebus quæ vulgares videntur, multa
“observatu digna occurrent.”*

Here then is the explicit opinion of Lord Bacon that medicine may be best cultivated by the collection and arrangement of facts, and this opinion he fortifies by a reference to the constant habit of the father of physic. Whoever will take the pains to turn over the pages of this illustrious sage, and there to read attentively the cases of Philiscus, Silenus, Herophantes, Cleonactides, Meton, &c. will be satisfied that the commendation of Lord Bacon was not bestowed without being deserved. He will perceive in the cases of Hippocrates striking examples of acute observation, detailed with luminous perspicuity and elegant conciseness.

It is by such authorities and from such considerations that I have been influenced to submit to the profession the *clinical and*

* De augmentis Scientiarum Liber. 4tus. Cap. 2um.

pathological reports which constitute this volume. Their value will, I trust, be enhanced by the dissections, each of which appears to me to establish or illustrate some important point.

I may farther observe, that when I some time ago read over those of my papers that had been earliest published, I perceived that they were contained in periodical works now almost withdrawn from the view of the profession—that they required revision—and that time and reflection had suggested new views on the subject. I therefore felt a kind of necessity for connecting them into one synoptical view.

Should the present volume be honoured by the approbation of those who are entitled to pronounce a judgment on the subject, that circumstance may afford me a powerful inducement to persevere in the same mode of communicating the results of experience.

Newry, May 20, 1819.

INTRODUCTION.

TACITUM VIVIT SUB PECTORE VULNUS.—ÆNEID. LIB. 4.

IN the year 1768, a disease was described by the late Dr. Heberden which had not previously excited the notice or attracted the attention of physicians. Nothing can be more accurate than his description of it. From the sense of anxiety and strangling with which its paroxysms are attended, together with a peculiar distress under the sternum, he gave it the name of *Angina Pectoris*. If a name were of much consequence, this one is extremely objectionable. A generic name should consist of one term only; and besides, this disease has no natural

relation to any of the Anginæ. Notwithstanding that his history of it is perfectly descriptive, he seems to have had no true conception of the real nature of the disease, or of the morbid structure in which it is founded; and he regrets that he had never seen the body of any one opened, who had died of it.

In the year 1772, an account was published in the Medical Transactions—Vol. 3d, of two cases of the disease, with the dissections. The first of these cases is detailed by Dr. Heberden, who says he procured Mr. John Hunter to open the body. The second is detailed by Dr. Wall, of Worcester. Both these dissections are altogether unsatisfactory; and it appears to me obvious that in neither of them was the condition of the coronary arteries attended to.

The late Dr. Fothergill seems to have been the next person who directed his attention to this subject. About the year 1776, he gave an account of two cases, with the dissections.* In the first of these cases, the

* Medical Observations and Inquiries—Vol. 5.

detail of the morbid appearances is very unsatisfactory and quite insufficient to explain the phenomena. But in the second case, where the dissection was performed by Mr. John Hunter, the true cause of the disease appears to have been detected and ascertained; and it is a curious and interesting coincidence, that this eminent anatomist and physiologist should have been the first who ascertained the actual state of morbid structure giving origin to a disease to which it was his own fate to fall a victim seventeen years afterwards, and under circumstances so closely corresponding with those of the subject he had just examined, namely, in a fit of anger.

The eminent persons whom I have mentioned, appear to me to have been the first who directed the attention of the profession to the investigation of this subject. But the true pathology of the disease continued to be involved in a considerable degree of doubt and uncertainty: for the dissections were very few, and even of these few, the results did by no means coincide.

In the month of March, 1792, when I had just settled as a physician, a case of

this kind came under my care. I had never before seen an instance of the disease, but was immediately enabled to ascertain and declare what it was, from having strongly imprinted on my memory Doctor Heberden's elegant and graphical description of it, a circumstance that demonstrates the great value of correct delineation and accurate history.

My patient had some knowledge of, and great confidence in the late Doctor Thomas Percival, of Manchester, by which he was induced to wish for the advice of that eminent physician. Out of this circumstance originated a correspondence between the Doctor and myself, which was interrupted only by his death. In one of his letters, he expressed the greatest solicitude to be made acquainted with the result of the case. When, therefore, in the subsequent March, it terminated fatally, and I had an opportunity of examining, by dissection, the disorganization that had been induced, I reported my observations to Dr. Percival. He was pleased to say that he considered my views of the disease as entitled to the "greatest attention"

and the dissection as "the most satisfactory
"and important of which he had any know-
"ledge." He therefore urged me warmly
to transmit a paper on the subject to the
Medical Society of London, and obligingly
offered to be the medium of communication.
I obeyed his injunctions, and my paper was
read before that society on the 10th of March,
1794. In this paper, I endeavoured to make
an application of the morbid appearances
to the explanation and elucidation of the
symptoms of the disease; and I am justified
in presuming that the Society received that
endeavour with much approbation; for they
did me the honour, on that occasion, to
vote me a silver medal, and to desire farther
communications from me.

Since that time, a very elegant and erudite
treatise on this disease has been published
by the late Doctor Caleb Hillier Parry, of
Bath. If the chronological place of an
inquirer or observer in pathology were of
much importance, I should be perfectly con-
tented to have mine assigned by a judge so
competent and so impartial. It appears that
the Doctor belonged to a small select society

of medical friends, who were in the habit of meeting at Rodborough, in Gloucestershire. Of this association Dr. Jenner was a leading member. Their object was the cultivation of medical science, and of those branches of natural science connected with it.— Doctor Parry says that the substance of his essay was first read in this society in July, 1788. He further states, that in the discussions which took place in this society, Doctor Jenner suggested that the *Angina Pectoris* probably arose from some morbid change in the structure of the heart; a lucky conjecture! which I think does the greatest credit to Dr. Jenner's sagacity and discernment. Dr. Parry observes, in continuation:—

“ I have mentioned that my paper was read
“ in the month of July, 1788. In the
“ month of March, 1794, a case of genuine
“ *Angina Pectoris*, was communicated to the
“ London Medical Society, by Dr. Black,
“ of Newry, in Ireland, who, on dissection,
“ found the coronary arteries ossified. This
“ case I may have occasion to quote here-
“ after; but I think it necessary to advert
“ to it now, in order that from a comparison

“ of its date with that of my original essay,
“ I may prove it to have had no share
“ in producing the conclusion either of my
“ friend Dr. Jenner, or myself, as to the
“ causes of the *Angina Pectoris*.” To the
truth and justness of this I most willingly
subscribe, and I beg permission to make use
of dates also, to shew the impossibility of
my having derived any hint or suggestion,
as to the causes of this disease, or the ex-
planation of its symptoms, from the opinions
of these two learned and respectable physi-
cians. My paper was read on the 10th of
March, 1794. Dr. Parry’s essay is dated
October, 1799.

It was not long till a second case of this
disease occurred to me. Of this also, I
transmitted an account to the London Medical
Society. My friend Dr. Percival, was, as
before, the medium of communication. This
second paper was read to the Society on
the 24th of October, 1796, and is published
in the 6th Vol. of their Memoirs.

An account of two additional cases of this
disease, occurring more recently, will be found
in the 7th Vol. of the transactions of the

Medico-Chirurgical Society of London. These were communicated by the friend of my early life, and the associate of my studies, Dr. Curry, of Guy's Hospital.

I now proceed to exhibit those papers in a connected series, and in the order in which they were originally offered to the profession.

ANGINA PECTORIS.

CASE I.

FROM THE MEMOIRS OF THE MEDICAL SOCIETY
OF LONDON.—VOL. 4.

Read March 10, 1794.

THE *Angina Pectoris* is a disease of which the causes have not hitherto been ascertained with that precision, which is always desirable in pathological inquiries, and in the treatment of which very little success has as yet been attained. If the following history of one strongly marked instance of the complaint, and attempt to ascertain the causes by dissection, should in any degree contribute to remove the obscurity attending this subject, or even afford an inducement to others to make farther advances in the same path of investigation, it will add to the satisfaction I feel in laying them before you.

Mr. Woodney, aged fifty-five, tall in stature, robust in his make, though not corpulent; accustomed in his mode of living to strict habits of regularity, temperance and attention to active business; was never subject to any gouty complaint, and antecedently to his present disorder, had enjoyed an uniformly good state of health. In March, 1792, while walking up an acclivity, he found a sudden pain strike him a little below the left mamma, which was accompanied with a sense of anxiety and oppression in the chest. These feelings immediately obliged him to stand still, on which they quickly vanished. In the course of a day or two, the very same train of symptoms was renewed, on a similar occasion of walking up an ascent, and was ever afterwards invariably renewed by every similar attempt. These attacks soon increased considerably in violence, and were excited by walking even on a plain, particularly if he exceeded a very slow pace. They were much more readily excited, if he attempted to walk after dinner, or in the evening, than at any other time, and were always accompanied with what he called a numbing

though severe pain diffusing itself from the left side of the thorax towards the shoulder, and thence down the arm, terminating at the insertion of the deltoid muscle. He complained constantly of a very peculiar sensation in breathing, of which, he said, he could not by description convey any adequate idea, but which, he thought, resembled the sensation he would have, if the skin were off his throat, and a very cold vapour rushing down it. He had very frequently a severe pain about the left scapula, which latterly became excessive.

When the disease had subsisted in this form for about five months, he began to be frequently attacked in the night with an excruciating pain in the left side of the chest, the same in kind with that already described, but exceeding it in degree, and having superadded to it a most severe dyspnoea, and intolerable sense of anguish at the heart, resembling that which is felt by a person exhausted and ready to faint from running, and a sensation which the patient compared to that which would be excited by a lump of hard bread, not sufficiently

chewed, sticking in the lower part of the œsophagus. The paroxysm usually attacked about two o'clock in the morning, and always during sleep. The symptoms gradually increased in violence for an hour nearly.— They then began to decline, and in about another hour they totally ceased. In one or two paroxysms of unusual severity, the right arm was affected with a pain similar to that above described in the left. The patient could never lie on the left side without having feelings of great uneasiness excited in the chest; and if at any time he happened, during sleep, to turn on that side, he was soon roused by an anxiety which, he was convinced, would soon have amounted to a severe paroxysm, if he had not immediately changed his posture. During no part of the fit, nor at any other time, was the stomach affected with eructations, flatulence, or any other complaint whatever. I had few opportunities of making observations on the pulse during a paroxysm; but in the intervals, it was natural both as to strength and frequency. The excretions were regular and natural.

Very soon after the commencement of these complaints, Mr. Woodney applied to me for advice. I was soon satisfied that the combination of symptoms, which he enumerated, constituted that rare and singular disorder, which was first particularly noticed and accurately described by the late Dr. Heberden, and to which he gave the name of *Angina Pectoris*. When I reflected on all that had been observed and recorded with respect to this disease, it appeared to me that the sum of all our knowledge on this head might be comprehended under two short propositions, viz:—

1st. Dissections have shewn this complaint to be connected either with some organic degeneracy of the heart or great vessels, or with some mechanical pressure upon them, arising either from an effusion of fluids or an accumulation of fat in the thorax.

2d. The symptoms constituting the paroxysms are evidently of a spasmodic nature.

These were the principles by which I was governed in treating my patient, and I think they receive the most ample confirmation from the history and event of his case.

Being unacquainted with any means of removing or correcting such a degeneracy as that stated in the first clause of the first proposition, I thought the only rational indication of cure that could be founded on this proposition, was to produce such an evacuation of the thinner fluids of the body as might have a tendency to remove any effusion, or to reduce any accumulation of fat that might be presumed to be present. With this view, two issues were established, a remedy which I was prompt to adopt, from the complete success attributed to it in two cases by the late learned and ingenious Dr. Smyth, of Dublin, and for the certainty of which we have not only his own evidence, but that of the late Dr. Macbride also.*—Blisters were applied to the chest occasionally, and a variety of medicines, adapted to the indication, were prescribed; such as antimonial and mercurial alteratives, the volatile tincture of guaiac, with antimonial wine, laxatives, &c. By the advice of a physician of eminence and much experience† the patient

* Medical Comment.—Vol. 5. † The late Dr. Haliday, of Belfast.

used tar-water to the amount of a jill three times a day. This medicine was continued for four months with great regularity and perseverance, and was uniformly observed to excite a considerable diuresis. Great moderation and even abstemiousness in diet were enjoined, and strictly complied with. On the approach of winter, a flannel shirt was recommended.

The indication arising out of the second proposition is sufficiently obvious. A variety of remedies accommodated to it were tried; the Peruvian Bark, the fetid gums, camphor, and the extractum cicutæ, to the amount of twenty grains twice a day, in which dose it excited headach and tremors. For the relief of the paroxysms, when present, I had recourse to the vitriolic æther and the tinctura thebaica in peppermint-water. These afforded relief at first, but soon lost their efficacy.

Notwithstanding such varied treatment, the effects of the remedies employed were far from corresponding with my earnest wishes. The only advantage gained seemed to be a longer interval between the paroxysms. In

other respects, the disorder continued to gain ground, and about two o'clock in the morning of Friday the 22d March last, the patient was attacked by a most dreadful paroxysm. When I visited him, I found him in exquisite torture. The pain was constant; but every minute, or every two minutes, it shot with peculiar violence and pungency from the left breast towards the scapula, producing each time a convulsive start, in which every muscle in the body seemed to be affected. A severe dry cough came on very suddenly, and continued incessantly for twelve or thirteen hours, when it went off as suddenly as it came on. The stomach rejected every kind both of medicine and drink. Neither blisters nor the warm bath afforded any relief. He continued in the greatest agony till four o'clock on Sunday evening, when he expired.

Being extremely anxious to avail myself of this opportunity of investigating the causes of so terrible a disorder, I with some difficulty obtained permission to examine the body.—The examination, (in which I had the assistance of my worthy and judicious friend,

Dr. William Haliday) was made forty hours after death.

On cutting through the integuments of the thorax, the cellular membrane was found loaded with fat to a much greater degree than the external figure and appearance of the patient, when living, would have led to imagine. The cartilages of the ribs, particularly on the left side, were become quite osseous. On cutting into the mediastinum, a part of its internal surface was covered with a thin layer of fat. There was no effusion into the pericardium, nor into either cavity of the thorax. The lungs were sound, but had some small adhesions to the pleura. The heart appeared large, and on being handled, was found to be unusually tender and lacerable. In none of the valves could any visible degeneracy be detected: but the two coronary arteries exhibited the most complete ossification I ever saw. From their origin through two inches of their length, they had become a complete bone. A cavity indeed still remained, the internal surface of which was lined with what had the appearance of a thin membrane, but which possibly might have been so far muscular as to con-

tribute, though certainly in a very inadequate manner, to carry on the arterial function. On the internal surface of the left auricle, a small osseous globule, of the size of a grain of shot, was found and the auricle itself was remarkably thin and had a decayed appearance. On the external surface of the left ventricle was a little fat; but the quantity was inconsiderable. The aorta, from its origin to its curvature was very much dilated, so as to exhibit rather the appearance of a bag than of an artery. Its internal surface, as well as its substance, when divided by the knife, very much resembled the white leather of which French gloves are made. The abdominal viscera, on a superficial examination, appeared perfectly sound.

If we compare these morbid appearances with those that have been discovered in other dissections relating to the same complaint, we shall find the coincidence in some essential points to be very remarkable. The ossification of the cartilages of the ribs has been observed both by Dr. Wall,* and by Mr. John Hunter.† In the former of these

* Med. Trans. Vol. 3. † Med. Observ. Vol. 5.

dissections, the dilatation of the aorta was also found; and in the latter, the very remarkable ossification of the coronaries.—Various small ossifications in different parts of the heart and great vessels, have been a frequent occurrence in dissections relating to this disorder. The chief point of discrepancy between this and other dissections is the absence of any effusion of fluids, or of any accumulation of fat in the chest; for the quantity of fat in this case was far from being remarkable. Is it reasonable to presume that it might have been more considerable in the early stage of the disorder? And if so, could its absorption be considered, in any degree, as a consequence of the means used for dissipating the thinner fluids, namely, the use of diuretics, diaphoretics and the constant drain of two issues?

I consider it as a speculation not void either of curiosity or utility, to inquire how far the symptoms of this complaint, detailed in the history of it, are capable of being explained by a proper application of the morbid appearances discovered by dissection or by known and acknowledged principles of physiology and pathology. When we

read over the history, it will be obvious from very little reflection, that there are several of the symptoms, towards the explanation of which the dissection affords no light whatever; while at the same time, there are others of which it enables us to give an account not altogether unsatisfactory. To the former class belong the diffusion of the pain from the chest to the shoulder and to the insertion of the deltoid muscle, the pain at the left scapula, where this same muscle has its origin, the peculiar sensation in breathing, resembling a stream of cold vapour and the sensation of something sticking in the œsophagus. These seem to me to have been owing to a morbid affection of the nerves of these parts, communicated from the nerves of those organs that were visibly diseased, by what physiologists have named *sympathy*, a term which is merely expressive of a fact, but by no means explanatory of it. With the fact however, we must remain satisfied till we shall have acquired a much more intimate knowledge of the functions of the nerves than we at present possess. Thus we receive for a fact, without being at all able to explain it, that

an inflammation of the liver excites a pain on the top of the right shoulder, and that the irritation of light on the retina is the cause of the contraction of the iris.

Most of the other symptoms contained in the history, may, I think, be comprehended in a second class, of which the morbid appearances will enable us to offer some explanation.

1st. The sudden pain excited by walking, and accompanied by a sensation of anxiety and oppression in the chest. The pain is, I think, clearly to be referred to the heart, as its seat. When we consider the degree of disease found in the heart and great artery, we cannot hesitate to allow that they must have been in a state of great inaptitude for the performance of their function; and it is a fact very generally observed, that when any organ is, by disease, rendered unfit for its office, the performance of that office is attended with pain. But to investigate this point a little more minutely:—by exercise, the blood is returned from the extreme parts to the heart with greater rapidity than when the body is at rest. The blood being thus returned to the

heart with increased rapidity, and the heart being incapable, from disease, of propelling it with proportional celerity, an accumulation of blood about the heart, and an impeded action of that organ must ensue, fully adequate to the production of the painful sensation. In this situation, the heart could not receive the blood returning from the lungs with that freedom that is natural and necessary. To relieve the lungs and facilitate the transmission of the blood through them, the patient would, by an instinct of nature, endeavour to enlarge the capacity of the chest, by making fuller inspirations than ordinary. But the ossification of the cartilages of the ribs would create a powerful obstacle to such an expansion of the chest. This obstacle, joined to the obstruction to the free return of the blood from the lungs, is, I think, sufficient to account for the symptoms of anxiety and oppression. Exercise, the exciting cause of these symptoms, ceasing, the symptoms ceased also. These attacks were more readily excited by walking up hill, because such an attempt requires greater muscular exertion, and will therefore have a greater effect in accelerating the

circulation than walking on a plain. They were more readily excited after dinner, partly perhaps, on account of the body possessing a greater degree of irritability during the process of digestion, and partly on account of the fulness of the stomach straitening the capacity of the thorax. The manner in which this diminution of capacity operates will be noticed afterwards.

2d. The nightly paroxysms. These were undoubtedly spasmodic, and the exciting cause seems to have been the diseased state of the heart and great artery. We know that a diseased condition of the other organs, the liver, spleen, stomach, uterus, &c. is observed to be a frequent cause of spasmodic or nervous symptoms. These paroxysms always came on during sleep. Of the particular state or condition of the nervous system during sleep we are ignorant: but we know from experience that it has a powerful effect in disposing the body to be affected with nervous disorders; a circumstance which I shall by no means attempt to explain, but which might be illustrated by a very extensive analogy. It is a matter of observation, that the whole train of nervous diseases, the

asthma, epilepsy, incubus, &c. are particularly prone to make their attack during sleep.

3d. The inability to lie on the left side. From the diseased state of the heart and great artery, it is evident that they would be incapable of bearing any pressure upon them or any diminution of the space they naturally occupy, with impunity. The left cavity of the thorax, in which the heart is chiefly situated, is naturally smaller than the right. When the patient lay on the left side, the left cavity would be diminished partly by the external pressure on the left side of the thorax, arising from the weight of the body itself, and partly by the incumbency of the right lobe of the lungs on the mediastinum. Hence arose the uneasiness inducing a necessity for an immediate change of posture. But when the patient turned to the right side, the left was freed from external pressure, and the heart, pericardium and great vessels had a tendency, by their own weight, to occupy a portion, however small, of the right cavity of the thorax and thus to produce an amplification of the left, whereby their motion was rendered more free and undisturbed.

Before I conclude this paper, I shall make one or two remarks which appear to me of some practical importance: and first, it appears from dissections, that there is some variety in the causes of this disorder; for though it does, in perhaps the majority of instances, depend on some organic labe of the heart or arteries, yet there is no doubt that mechanical pressure alone, arising from the causes already stated, is capable of producing all the symptoms. The dissection of the body of R. M. Esq. given by Doctor Fothergill,* sufficiently proves this assertion. Here the heart and great vessels were perfectly sound, but were exposed to mechanical pressure, both from an effusion of water and an accumulation of fat. The complete success with which three cases of the *Angina Pectoris* were treated by the ingenious Doctor Smyth, of Dublin, appeared to me for some time inexplicable; but I think the present view of the subject tends in some measure to remove the difficulty. Doctor Smyth was for thirty years very deservedly at the head of his profession in this kingdom, and no man will call in question either his judgment or

* Med. Observ. Vol. 5.

sagacity in distinguishing this complaint from every other, nor will any presume to entertain a suspicion of his veracity in relating the success of his practice. I think Dr. Smyth's cases must have belonged to that variety of the disease depending on mechanical pressure. One of his patients was only thirty-four years of age, and had felt the first symptoms of the complaint so early as seventeen, a period of life at which we should not expect any organic disease of the heart or great vessels. In two of these cases, the cure was accomplished by issues: in the third, by an antimonial alterative, aided by large spontaneous discharges of a gleety ichor from the scrotum and anus, which might be considered as a kind of natural issue. The practical inference resulting from this view of the subject is, that in those cases depending on mechanical pressure, we need not despair of curing the disease. The physician therefore who will furnish us with a diagnostic by which we may be enabled to distinguish these two varieties of the disorder, will make an addition to our knowledge of it very much to be desired. Such a diagnosis I am not at present prepared to establish. I shall only

observe that in those cases which appear to have depended on mechanical pressure, an irregularity of the pulse seems to have been a more frequent concomitant than in those depending on an organic labe. The case of R. M. Esq. above quoted, and two of Doctor Smyth's cases, have a tendency to confirm this observation. I may observe farther, that the younger the patient, there is the less probability of any organic degeneracy. In the meantime, till a more complete and satisfactory diagnosis can be made out, it will perhaps be advisable for a physician, when treating this disorder, to proceed on the idea of its depending on mechanical pressure, because if the fact should coincide with the supposition, he may afford considerable relief, perhaps effect a cure: if it should not, no injury is done, nor any advantageous opportunity lost; for I believe we are as yet unacquainted with any means of correcting or removing ossification, or other organic blemish of the heart.

I should consider it as a great improvement to ascertain, with accuracy and precision, the remote causes of this disorder. This part of the history of it is still very imperfect,

and well deserves the attention of those who may have opportunities of observation. One circumstance is pretty obvious, that it seems in most instances to have been connected with a degree of obesity.

One gentleman, who has written a theory of this disorder, supposes it to be of a gouty nature; and that it is in fact nothing else than an irregular gout, affecting particularly the diaphragm; for which reason he thinks it ought to be named the *diaphragmatic gout*. For my own part, I am ignorant of any histories or dissections relating to this complaint, that can afford a foundation for such an opinion. It may unquestionably have been complicated with the gout; but if a physician will not carefully discriminate between a casual conjunction and a necessary connexion, his practice will in many instances be unsuccessful, his judgments erroneous, and his errors fatal.

Are women exempted from this disease? I do not recollect any decided instance on record of its occurring in the female sex, and some of the oldest and most experienced physicians in this part of the kingdom have made the same remark.

ANGINA PECTORIS.

CASE II.

FROM THE MEMOIRS OF THE MEDICAL SOCIETY
OF LONDON.—VOL. 6.

Read October 24, 1796.

THE wish which you so obligingly intimated, that I would communicate to you any thing curious or interesting that might occur in the exercise of my profession, induces me to trouble you with some account of a second case of the *Angina Pectoris*. The person in whom it occurred was Mr. Joseph Carson, a very respectable merchant of this town, whose life was marked by habits of the strictest regularity and temperance. Mr. Carson had never been liable to gout, nor to any other complaint, that which is the subject of this paper excepted. The first

attack occurred above thirty years ago, when Mr. Carson was aged thirty-two. Being on horse-back, riding very slowly, and being very inattentive to the management of his horse, the animal made a sudden and dangerous stumble, in consequence of which, Mr. Carson instantly felt what he called a severe *sting* at the heart. The sensation continued, with acute pain, for a minute; but no similar feeling was experienced for a year. However, at the end of that time, on attempting to walk fast up a hill, a sudden and extremely violent pain in the chest obliged him to stand still for fear of instant dissolution. For several years the attacks were very unfrequent, nor did they excite that alarm which they ought to have done. In time, however, they became more frequent and more severe, and were attended with a peculiar sensation, extending along the arms, which Mr. Carson compared to the rushing of a hot fluid. He now went to Dublin, in order to consult the late Doctor Smyth. The chief remedy recommended by him was issues. Two were accordingly established, and for four or five years much

advantage was experienced from them, the attacks becoming less frequent and less severe. Conceiving that the disease was now in a great measure cured, Mr. Carson, as imprudently as unfortunately, closed up the issues; in consequence of which, the complaint became much worse. He was, indeed, sufficiently prompt again to have recourse to the remedy which had before afforded so much relief, and the issues were re-established; but not with the same beneficial result as formerly. For the last twelve years of his life, the violence of the symptoms continued regularly to increase. But finding no relief from the advice of the most judicious physicians, and feeling a conviction of the fatal tendency of the disorder, he forebore the use of all remedies except laudanum, very large quantities of which were rendered indispensable by the extreme severity of the nocturnal paroxysms. In the month of December last, these became of unusual violence, frequency, and duration. In the beginning of February, while sitting in the evening drinking some chocolate, he fell suddenly off his chair, and instantly expired. You will readily believe

that I felt the most anxious solicitude to have an opportunity of examining the body. That liberty being permitted, the examination was made next morning.

DISSECTION.

The cellular membrane was universally loaded with fat. An incipient ossification was discoverable in the cartilages of some of the ribs. On opening the thorax, the mediastinum was covered with a layer of fat of unusual thickness and extent. There was an effusion into the pericardium, of a serous fluid to the amount of nearly four ounces; but none into either cavity of the thorax. The heart, on being handled, appeared sound, and not lacerable, as in the case of Mr. Woodney. The aorta appeared somewhat dilated. The valves were sound. On examining the coronary arteries, I found, with a mixture of satisfaction and surprise, that they were completely ossified through their whole extent. I cut them out, preserved them, and they are still in my possession. The more remarkable of the two, immediately after its origin, divides into two

capital branches, the larger of which is a solid bone; the other, though apparently somewhat pervious, yet extremely osseous through its whole extent: and even the small ramifications from these capital branches were completely indurated and inflexible. The abdominal viscera were sound.

This dissection suggests some reflections which appear to me to be of considerable importance: and first, the remarkable coincidence (in what I conceive to be the essential point) with that of Mr. Woodney, is a circumstance very deserving of observation.—It appears to me probable that the true pathology of this disease may be more simple and uniform than has been commonly imagined, or than I have myself represented it in my paper on Mr. Woodney's case. If you desire me to state my opinion on this head, it is briefly this:—That the primary and original cause of the disorder is, perhaps in every instance, the ossification of the coronaries; and that the effusion of fluid, and the accumulation of fat, which dissectors have observed, are to be considered as the natural, and indeed the necessary effects of

this ossification. When I say necessary, I would be understood to mean, when the disease has been of long standing. How effusion should be the consequence of diseased or obstructed vessels, is surely too obvious to require any illustration. The accumulation of fat is, I think, pretty clearly deducible from the same cause. The diseased state of the heart produces an impeded and weakened action of that organ: the blood is not propelled into the distant vessels with the force that is natural and necessary: the exhalation (in parts remote from the heart,) and all the thinner excretions are diminished: a plethoric state of the sanguiferous system is induced, and oil is deposited in unusual quantity, in the cellular membrane.* This deposition of oil is much favoured by the patient's inability to use his accustomed exercise. The effects of issues and of all remedies tending to keep up the thinner excretions, in palliating the symptoms of this complaint, are best explained by this view of the subject.

It will, perhaps, be objected to this reason-

* Note A.

ing, that there are on record some dissections, in which no organic degeneracy whatever was discovered; and others in which the effusion and the accumulation of fat were observed,* but not the ossification of the coronaries. To this I answer,

1st. That the dissections relating to this disorder are by no means numerous, being all, so far as I know, contained in the two works already quoted. Of these few, there is one (the dissection of the body of H. R. Esq. by Mr. John Hunter) perfectly coinciding with the two which have fallen under my observation.

2d. With respect to those dissections in which the ossification of the coronaries was not found, I observe, that the coronaries are small vessels and that they do not lie altogether superficial; but are, in some degree, buried in the substance of the heart; for which reason, I think it very possible that their condition might pass unobserved, even by a very accurate dissector, if he were not particularly apprized of the necessity of attending minutely to that circumstance. For

* Med. Observ. Vol. 5.

my own part, if I had not been on my guard with respect to it, I think it would have passed unnoticed by me in the two dissections of which I have now given you some account.*

3d. I observe, that there are cases innumerable, both on record, and daily passing under our observation, as in the hydrothorax and empyema, in which an effusion of fluids does not excite the characteristic symptoms of this disorder; and with respect to an accumulation of fat, though cases of this kind are not so numerous, yet every person acquainted with dissections will acknowledge that many such are to be found in which no such symptoms have been observed.

4th. I am unable to find on record any case in which the ossification of the coronaries was really found, and the symptoms of *Angina Pectoris* were absent. Let it not, however, be supposed that I mean to impeach the accuracy of other dissectors, or to press my own observations with an unbecoming confidence. My wish is, that the point should be fully and clearly ascertained by future investigation. I expect, however, it will be found

* Note B.

that the usual simplicity and uniformity of nature prevail in this instance; and shall only take the liberty of adding, that the same rules by which we are governed in classing the great phenomena of nature may, I think, be applied, with much advantage, in all attempts to establish pathological principles, viz:—

“Causas rerum naturalium non plures
“admitti debere, quam quæ et veræ sint, et
“earum phænomenis exponendis sufficiant.”

“Ideoque effectuum naturalium, ejusdem
“generis, eædem assignandæ sunt causæ,
“*quatenus fieri potest.*”

NOTE A.

The accumulation of fat in the thorax, and the unusual deposit of it in the adipose membrane under the common teguments, are circumstances very deserving of notice, and may perhaps require farther explanation than I have offered above. In this dissection, the mediastinum was found to be the seat of the deposit: but I rather think that the more usual fact has been that the heart itself has been found imbedded in a thick layer of fat. This condition of the heart is to be carefully distinguished from an affection of that organ in which its muscular tissue is converted into fat, of which there are several instances. But in the case I am now considering, the

adipose deposit is external, and the fibrous tissue of the muscle remains unchanged.

The following considerations tend to throw light on this remarkable accumulation of fat:—

1st. There is an incapacity of using exercise. The necessary consequence is a diminution of the cuticular excretion, and the retention within the body of certain matters that ought to pass off by that emunctory. It seems to have been ascertained that a certain proportion (not a large one) of the matter perspired is of an oily nature, and if we consider the vast amount of this excretion, we shall not be surprised that any permanent diminution of it should produce results greater than a superficial view of the matter might lead us to suppose. According to the experiments of the illustrious and ever to be lamented Lavoisier, the medium quantity perspired in twenty-four hours amounts to 52.89 ounces. The experiments of Mr. Cruickshank afford a result considerably higher.

2d. The effect of exercise in exciting the energy and activity of the absorbent vessels is well known, and the agency of these vessels in removing any deposit from the cellular tissue is equally so. In the inactivity then of these vessels, we discover another source of the accumulation of fat.

3d. If the following speculation be sound in all its parts (and every one of them rests on good authority) it will tend to throw light on the subject under contemplation. The consumption of oxygen in the process of respiration is greatly influenced by exercise. This is ascertained by the experiments of the French chemists, Seguin and Lavoisier. They found that the quantity of oxygen consumed by the lungs in one hour, in a state of rest, was to that consumed in the same space of time, during brisk exercise, in the ratio of 1,344 to 3,200. Now this

oxygenization of the blood is a measure of its decarbonization; for the quantity of carbonic acid gas produced is proportional to the quantity of oxygenous gas consumed. Carbon is an ingredient of fat, and constitutes four-fifths of its weight. If then the elimination of this chief constituent of fat be, during exercise, more than double what it is during rest, the effect of rest in favouring the accumulation of oil in the adipose membrane is sufficiently intelligible.

NOTE B.

I wish the reader to observe, that what was thrown out twenty-two years ago as plausible or probable conjecture, subsequent experience seems to have established as a positive truth. That the state of the coronary arteries passed unnoticed in several of the more early dissections will scarcely be called in question by any one who will take the trouble attentively to peruse them. The first dissection on the subject is that contained in the *Medical Transactions*—Vol. 3. Here, the coronary arteries are never once mentioned. In the paper immediately succeeding this, we have the account of a dissection by Dr. Wall, in which the semilunar valves were ossified, as well as the aorta, which was dilated at its curvature; but there is no mention whatever of the coronaries. Let us next attend to the two cases given by Dr. Fothergill, in the *Medical Observations and Inquiries*—Vol. 5. In the first of these, there is no allusion whatever to the condition of the coronary arteries. But in the second case (that of H. R. Esq.) Mr. Hunter found that these arteries were become “one piece of bone.” This I take to be the first case in which the fact was ascertained to exist, which has since, when sought for, been uniformly found. If any thing should still be wanting to give to

my conjecture all the force and weight of truth, that, I think, will be supplied by the following passage from Dr. Jenner :—

“ The first case I ever saw of *Angina Pectoris*, was
 “ that in the year 1772, published by Dr. Heberden, with
 “ Mr. Hunter’s dissection. There, I can almost positively
 “ say, the coronary arteries of the heart *were not ex-*
 “ *amined*. Another case of a Mr. Carter, at Dursley, fell
 “ under my care. In that, after having examined the
 “ more important parts of the heart, without finding any
 “ thing by means of which I could account either for his
 “ sudden death, or the symptoms preceding it, I was
 “ making a transverse section of the heart pretty near its
 “ base, when my knife struck against something so hard
 “ and gritty as to notch it. I well remember looking up
 “ to the ceiling, which was old and crumbling, conceiving
 “ that some plaster had fallen down. But on a further
 “ scrutiny, the real cause appeared: the coronaries were
 “ become bony canals. Then I began a little to suspect.”
Parry on Syncope Anginosa.

In the second case of those enumerated by Dr. Blackall in his appendix on *Angina Pectoris*, which is that of Wm. Duffell, the Doctor expressly mentions that the state of the coronaries *was not examined*. This occurred so lately as September 1798.

If the reader should be surprised or confounded by this seeming inadvertence of enlightened British physicians, equally distinguished for industry, zeal and extensive erudition, I beg permission to present to his attentive consideration the following circumstance:—A work has been published in a neighbouring nation, distinguished by the successful cultivation of every department of science, on the diseases of the heart and great vessels: I allude to the “ *Essai sur les maladies du coeur and des gros vaisseaux, par I. N. Corvisart, Paris 1811.*” The author,

the imperial physician, holding the highest professional rank, was deservedly elevated to a high civil rank also, and the "*Essai*" was ushered into the world under imperial auspices, being dedicated *by permission* "a sa majeste, l'empereur et roi." The work is beyond contradiction one of great merit, and the number of dissections it contains evinces that the author was in possession of the most ample opportunities of investigation and research. These opportunities have been rendered available by the application of ability, ingenuity and accurate observation. Yet in this work, such as I have represented it, there is not one word of the disease I have been endeavouring to explain and illustrate. In what light then are we to consider this fact? Can we presume that the author has altogether overlooked or neglected a disease of the heart so serious and important as that under consideration? I can scarcely admit of such a supposition. Shall we then allege that the disease is less known and of less frequent occurrence among our neighbours, than among the inhabitants of these islands? That, I think, is sufficiently probable. I can readily conceive that French habits and modes of living, coinciding with the benignity of their climate and the peculiar character of their moral affections, may have a less tendency to favour this peculiar disorganization than the same circumstances, considered in their application to the inhabitants of the British islands. It is not to be imagined that a disease of the heart, attended with such marked lesion of structure, should be altogether omitted in a work of this kind, if it were of frequent occurrence.

ANGINA PECTORIS.

CASES III. & IV.

FROM THE LONDON MEDICO-CHIRURGICAL
TRANSACTIONS.—VOL. 7.

Read January 23, 1816.

AT the time when my first observations, on the disease which has been named *Angina Pectoris*, were communicated to the public, the affection was by no means so well understood, nor the morbid changes of structure on which it appears to depend so thoroughly investigated and ascertained as they have since been: Many zealous and diligent inquirers have communicated to the medical world the result of their observations on this subject; but the learned and truly didactic work of Dr. Parry, of Bath, has concentrated

into one luminous point of view the scattered rays flowing from a variety of sources. I have, in the course of subsequent experience, met with two additional cases of this disease, in both of which, I have had an opportunity of ascertaining, by dissection, the morbid changes of structure; and their coincidence with those formerly detailed is so remarkable, that I trust the Society will consider the accumulated weight of evidence as worthy of being communicated to the public. It occurs to me that there are few diseases in which the morbid changes may be predicted with greater confidence.

The first of the two cases which I have now to notice, was that of Mr. Marron, an eminent school-master, of this place, who, at the period of his death, was aged about 56. The circumstances of this case I must detail partly from memory, and partly from some short notes which I find in an old commonplace book of that day. A history of the disease and of the appearances on dissection which I had drawn up was destroyed by a sinister accident. Mr. Marron had been through life a healthy man, not liable to gout, nor indeed

to any other disease. He had, however, been exposed to bitter domestic affliction, having, by a consecutive train of calamity, lost a number of fine children, till at last he was left childless. His disease commenced in 1799. The first symptom was an intolerable sense of anguish under the sternum, seizing him while walking, especially if up hill, or at a pace at all accelerated; accompanied by a severe pain diffusing itself from the chest to the left scapula, and down the left arm to near the elbow. The sensation was such as to impress him with an apprehension, that if he should advance another step, life would be extinguished. But on standing still, these symptoms immediately vanished. When matters had gone on in this way for nearly eighteen months, he began to be awaked out of sleep, by the nightly paroxysms. These admitted of a temporary and imperfect relief from opiates and cordials. About September, 1803, he began to have decided indications of hydrothorax. These were repeatedly relieved by digitalis, squill, and the pil. hydrag.; but uniformly recurred after a short interval. In a word, he spun out life in this miserable

way till July 1804, when he expired rather suddenly.

DISSECTION.

Permission being obtained to open the body, the first striking appearance was the degree to which the cellular membrane was loaded with fat. The cartilages by which the ribs are connected with the sternum, had become completely osseous. The cavity of the chest contained a large quantity of fluid. The heart was loaded with fat, large, flabby, and soft. The valves were all sound. There were several osseous scales on the internal surface of the aorta, near its origin. The coronary arteries (which are still in my possession) were ossified through their whole extent.

The second case which I have to narrate, was that of a lamented friend, the Rev. Joseph M'Cormick, many years vicar of Aghaderg, in the diocess of Dromore, but lately promoted to the rectory of Mealiff, in the arch-diocess of Cashel. Mr. M'Cormick was aged about 56, had been occasionally affected with gout, but neither frequently nor severely. He had been liable for many

years to discharge of blood from the hæmorrhoidal vessels, without pain or external tumour. This had often been profuse, but had entirely ceased for three years or more, and he had become fat and rather plethoric. All his habits were those of the strictest regularity and temperance, and he was uniformly influenced by those principles of virtue, honour, and worth, that adorn and exalt the human character.

I visited him early in the month of January last, when I was enabled to ascertain the following circumstances.

Mr. M'Cormick had undergone much fatigue and anxiety during Christmas week, in visiting his parishioners for the last time, preparatory to his removal to the south of Ireland. On Christmas-day, he preached his farewell sermon. The emotions to which this gave rise on both sides were of a very warm and lively character, commensurate with the ardour of esteem and attachment subsisting between him and his flock. The peculiar services of the day were protracted to an unusual length, by which he was much fatigued. His glebe-house was distant from

his church about half a mile, and between them was a gentle acclivity. While ascending this, he was obliged suddenly to stand still on account of a feeling of exquisite distress in the chest, accompanied by such a sense of debility and sinking, as appeared to threaten instantaneous dissolution. When he stood still, these feelings immediately subsided; but were repeatedly renewed by renewed attempts to continue his walk. At length he got home with difficulty, and in a state of great exhaustion. This paroxysm was very easily renewed ever afterwards, by very slight muscular exertion; such as walking up stairs, dressing or undressing, going into the tepid bath, &c. was uniformly accompanied by a very painful sensation, to which he applied the term *scalding*, diffusing itself from the left side of the thorax towards the scapula, the œsophagus, and down the left arm to the insertion of the deltoid muscle, where it terminated.

It appeared to me altogether extraordinary, that this complaint should have risen to such an intensity in so short a time. However, on making minute inquiry, I found that he

had occasionally been affected with feelings of the same kind for a length of time, perhaps three or four years, but that they had never assumed the same exquisite form as since Christmas-day. He had long been unable to walk up a hill, or against a strong wind, without having some degree of this peculiar anguish excited in the chest. He had, however, partly from his uncomplaining disposition, and partly from a reluctance to give alarm to his family, forborne to say much on the subject. I found farther, that he had for many years been prone to faint, more especially after dinner. His pulse was from 50 to 56, and weak. In the month of February, he began to be attacked out of sleep by the nightly paroxysms.

From the distance of his residence, I had no opportunity of seeing him during the paroxysm; but he told me that his feelings on these occasions were as if every thing within *were at a pause*, or as if *he were just going to die*. It is deserving of attention, that, on many occasions, he was able, by getting out of bed, fixing himself in his arm-chair, and concentrating his attention on

some interesting kind of reading, to *baffle the paroxym*, as he expressed it. He also found relief from making a moderately full inspiration, retaining the breath and keeping the chest for a time in that state of expansion. He thought himself at all times the worse for eating, however moderately, and he had an unpleasant sensation both in manducation and deglutition, which indisposed him to the exercise of those functions.

In the month of March, the symptoms of hydrothorax were unequivocally marked, and the ancles became œdematous. These symptoms were effectually relieved, for a time, by the digitalis and pil. hydrag.; but they soon recurred. Towards the latter end of May, he went to Dublin, where he remained for some time under the care of Dr. Edward Percival, Dr. Mills, and Mr. Richards.—About the 21st of June, he returned from Dublin to Rosstrevor. The cellular membrane was now universally loaded with effused fluid, and the symptoms of hydrothorax so very urgent, that he could rarely get into the recumbent posture; and after infinite suffering and distress, sustained like a philosopher and

a Christian, he expired on the morning of Thursday the 13th of July.

DISSECTION.

The good sense and enlightened humanity of his friends anticipated my anxious wishes, and suggested to them the propriety of examining the body. That operation was performed in my presence, thirty hours after death, by Mr. Brown, staff-surgeon. On turning back the integuments, the cellular membrane was more loaded with fat than I had expected. On attempting to cut through the cartilages by which the ribs and sternum are connected, they were found so completely bony that the knife would make no impression on them, and Mr. Brown was obliged to use a small saw for that purpose. On laying open the cavity of the thorax, there appeared a very large effusion into the sacs of the pleura, to the amount of at least *eight* or *nine* pounds. The pericardium did not partake of this effusion. The heart, considerably loaded with fat, was large, flaccid and tender, and deficient in that floridness

which the healthy heart possesses. On its external surface, were several spots of the breadth nearly of a six-pence, of a palish yellow colour, but perfectly soft. The valves were all sound. The coronary arteries were ossified in a remarkable manner. They are in my possession. One of them divides, immediately after its origin, into three principal branches, every one of which is osseous through its whole extent: saving that the bony structure is interrupted at intervals.—The longest branch, which is five inches long, is not pervious to the smallest probe for more than half an inch; the other two branches not so far. The other coronary does not divide into branches, but its calibre is perfectly obliterated, and they are all as rigid and incompressible as any other bone of the same diameter. About three inches of the aorta being cut out, its internal surface exhibits a number of osseous scales, surrounding more especially the origin of the coronaries. There is one very remarkable lamina of bone, one-third of an inch long, nearly as broad, and as thick as a shilling. The lungs were perfectly sound, as were

the abdominal viscera. Some adhesions between the omentum and the concave surface of the liver could not be said to form an exception.

I shall now take the liberty of stating some general results which seem deducible from a review of the four cases that have been detailed.

1st. In every one of these, there was an ossification of the coronary arteries of the heart as complete as can well be imagined.

2d. In every one of the cases, there was an ossification of the cartilages of the ribs, more or less complete. This circumstance is not merely curious: it is important also. It seems to indicate the existence of an ossific diathesis prevailing in the constitution, and discovering its effects beyond the bounds of the arterial system.*

3d. Of my four patients, one only had been liable to gout.

4th. Two of the cases terminated by a copious effusion into the chest; one by effusion into the pericardium, and one without any effusion.

* Note C.

5th. The disease appears in general to be connected with a full habit, and with an accumulation of fat about the heart and in the cellular membrane. It may, perhaps, in some instances, have some connexion with the suppression of habitual discharges. Mr. M'Cormick had, for a series of years, been liable to a bleeding from the hæmorrhoidal vessels, which had ceased for three or four years. But whether the cessation of this hæmorrhage and the commencement of his disease stood to each other in the relation of cause and effect, it is difficult to decide. The late Dr. Smyth, of Dublin, attributed the successful event of one of his cases, to large spontaneous discharges of a gleety ichor from the scrotum and anus.

6th. Hence the propriety and expediency of issues would seem to follow as a natural consequence. In Mr. Carson's case, the temporary benefit derived from them was remarkable.

7th. It has been alleged that the ossification of the nutrient arteries of the heart should be regarded as the consequence, rather than the cause of the disease. A con-

troversy on this head would appear to me very much a verbal one, and therefore very unprofitable. I have no conception that this ossification is the only link in the chain of causation; but it is the only one we can see clearly. Some cause must have existed prior in the order of time, whether that be an unusual quantity of the calcareous phosphat circulating in the general mass, or a specific action of the arterial coats by which that is developed and deposited, or whether the osseous deposit is to be considered in the light of a chemical precipitate.

8th. The pernicious and baneful influence of strong moral affections, is illustrated by the history of both Mr. M'Cormick's and Mr. Marron's case: and in the case which occurred to Dr. Parr, and which is communicated by Doctor Blackall, the patient was seized with his disease on the occasion of an imprisonment for debt.*

* Note D.

NOTE C.

The idea of an ossific diathesis prevailing in the constitution, and displaying its effects more especially in the arterial system, appears to me to deserve the most serious consideration. It will, I trust, be kept in view by those who may in future direct their attention to the investigation of this subject. I have mentioned that in every one of my four cases the cartilages of the ribs were ossified; and the same fact is mentioned in five of the recorded cases, namely, in Dr. Wall's case; in the case of H. R. Esq. before referred to; in the case of the Rev. Mr. S — by Dr. Parry; in the case of Wm. Duffell, by Dr. Blackall; and lastly in the case of Mr. John Hunter, as recorded by Sir Everard Home, Bart. in his life of that great man. But it is to the arterial system more particularly that I would wish to direct the attention of future inquirers.— In the meantime, I beg leave to observe, that in two of the most strongly marked cases of this disease, in both of which the heart exhibited that peculiar disorganization which appears to constitute its essence, a deposit of osseous matter in the coats of arteries situated in an entirely different cavity was found to exist as a coincident fact. The cases to which I allude are those of H. R. Esq. and of Mr. John Hunter. In the former (says Dr. Fothergill) “On the fore-part of the falciform ligament was a considerable ossification:—the internal carotid and basilar artery were beginning to ossify.”

In the case of Mr. Hunter (says Sir Everard Home) “The internal carotid arteries, as they pass by the sides of the sella turcica, were ossified; and several of the ramifications which go off from them had become opaque and unhealthy in their appearance. The vertebral arteries, lying upon the medulla oblongata, had also become bony; and the basilar artery, which is formed

“ by them, had opaque white spots very generally along
“ its coats.”

The following dissection given by the Baron Corvisart, who had no theory to serve on this subject, though it do not relate to *Angina Pectoris*, appears to me to afford satisfactory evidence of the fact I wish to establish, the occasional prevalence of an ossific diathesis, the effects of which are general throughout the arterial system :—

A l'ouverture du cadavre, les poumons étaient intacts, la masse du coeur extrêmement dure and pesante ; quand on voulut inciser le ventricule gauche, on éprouva une grande résistance causée par le changement total de cette partie charnue en un véritable pétrification qui avait une apparence sablonneuse en certains endroits, et ressemblait, dans d'autres, à une cristallisation saline. Les grains de cette espece de sable, très rapprochés les uns des autres, devenaient plus gros à mesure qu'ils s'éloignaient de la superficie du ventricule, en sorte qu'ils se continuaient intérieurement avec les colonnes charnues ; ces dernières, aussi pétrifiées, sans avoir changé de forme, avaient acquis une volume considérable ; plusieurs égalaient la grosseur de l'extrémité du petit doigt, et avaient l'air de véritables stalactites placées dans différentes directions. L'épaisseur totale du même ventricule était augmentée. Le ventricule droit, ainsi que les gros troncs artériels qui partent du coeur, ne présentaient aucune trace de désorganisation. *Les arteres temporale, maxillaire, et une partie de la radiale, étaient ossifiés de chaque coté.*

Facts such as I have now stated, should they be strengthened by future observation and confirmed by future experience, will justify us in asserting that the predisposition to *Angina Pectoris* consists in a certain constitutional tendency prevailing through the heart and arteries to form osseous deposits in their coats or on the surfaces of them, which deposits taking place more especially in the nutrient

vessels of the heart, constitute the proximate cause by exciting that peculiar combination of symptoms which forms a distinct genus of disease.

NOTE D.

It is in times of public calamity and of civil war, when the worst passions of mankind are unchained and misery is to be found in every quarter, that the influence of these moral causes in inducing disease of the heart, is demonstrated with a lamentable variety and force of evidence:—The Baron Corvisart, an ocular witness of the transactions of the French revolution, is very explicit on this head; and his words are too remarkable to be omitted:

“ Mais de toutes les causes capables de produire les
 “ maladies organiques en général, et spécialement celles
 “ du coeur, les plus puissantes, sans contradict, sont les
 “ affections morales.” And again:—“ Les scènes sanglan-
 “ tes de la revolution, leurs hideux tableaux, les boulever-
 “ sement des fortunes, les saisissemens, les émotions, les
 “ chagrins qui en ont été la suite, ont, dans ces derniers
 “ temps, fourni une foule de preuves de l’influence des
 “ affections morales, sur le développement des maladies
 “ organiques en général, et de celles du coeur en particu-
 “ lier. Combien n’avons nous pas vu, dans les hôpitaux,
 “ des personnes naguères opulentes, alors réduites à la men-
 “ dicite, désirer, pour terme de leurs maux, une morte
 “ prompte, que des lésions organiques du coeur leur appor-
 “ taient trop lentement à leur gré!”

Another reflexion, having an affinity to what has been just mentioned, here obtrudes itself on the mind; and though it does not belong to my subject, I trust I shall be excused for giving it utterance. The causes just enumerated appear to have the most powerful operation in

exciting another malady, the most deplorable that can afflict humanity! I mean disease of the brain and consequent insanity. This truth is clearly established by the testimony of that eminent French physician, Pinel, celebrated for his treatment of the insane, and who presided for so many years over the Bicêtre. See his "Traité Medico-philosophique sur la manie." It also derives an unfortunate degree of confirmation from the experience of our own country. If the curious inquirer will look into a very able work lately published, Dr. Hallaran's "Practical Observations on Insanity," which work is in fact a memoir of the Cork Lunatic Asylum, he will find the most ample confirmation of the fact I have mentioned. Dr. Hallaran clearly deduces the vast increase of insanity within the last twenty years from causes, which, if it were not too great a departure from common language, I should denominate *political passions*. The moral disease both of head and heart which prevails during such convulsions is sufficiently obvious to common observers. But the corporeal disease induced, the actual derangement of physical structure, has not perhaps been much attended to. The knowledge is of that kind that comes within the ken only of the inquisitive pathologist or the philosophical anatomist. If, however, such be the fruits of civil war and of revolution, the avowed object of which is always to procure a certain good, real or imaginary, for mankind, would not common prudence (not to speak of justice) require that they should enter as an item into the calculation of the expense at which the proposed good is to be purchased? Ministers and Statesmen! Patriots and Revolutionists!—May the voice which was heard by Æneas and the Sybil resound in your ears

Phlegyasque miserrimus omnes
Admonet, & magna testatur voce per umbras :
Discite justitiam moniti, & non temnere divos.

And may no minister or patriot of these realms ever admit
of the application of the succeeding lines!

Vendidit hic auro patriam, dominumque potentem
Imposuit : fixit leges pretio atque refixit.

THE TREATMENT.

It remains that I should give a very concise view of the treatment which I conceive best adapted to this disease, so far as I have been enabled to form opinions on that head from experience, from reading and from reflection.

I shall first consider the measures proper to be adopted during the paroxysm. In the incipient stage, the paroxysm is usually brought on by bodily exertion or by mental emotion. But when the disease has subsisted for some time, the nightly paroxysms commence; and they are the most distressing that can be conceived. The patient is roused from profound sleep with a sensation as if he were about immediately to expire. It seems to him as if every inward movement were completely suspended. The sense of anguish at the heart is extreme. They are, I think,

best obviated by a moderate dose of laudanum taken immediately on going into bed. The best vehicle seems to be peppermint-water, which has usually the effect of expelling flatus from the stomach, an effect which appears to be always advantageous. To this draught may be occasionally added a moderate quantity of the sulphuric æther, or of the æthereal oily liquor. Five or six grains of some of the fetid gums, with one or two drops of the essential oil of caraway, cinnamon or mint, taken before bed-time, have appeared to contribute to the same end.

The exhibition of any stimulant or cordial when the paroxysm is actually established, appears to me a very nice point and of equivocal effect. I have had reason to think that wine or alcohol, or any of those remedies which urge the heart beyond its capacity of performance, was injurious, unless the dose was extremely moderate indeed. I am of opinion that the only beneficial operation they can have is by expelling flatus or relieving muscular spasm; for the respiratory muscles seem, during the fit, to be under

the influence of a sympathetic spasm. If such a dose be given as will decidedly stimulate the heart to action, it will in all probability be pernicious. When the fit is severe, we shall sometimes be driven, by the urgency of the case, to repeat the same anodyne draught mentioned above; and it will sometimes afford relief. A small draught of water, swallowed pretty hot, has often relieved the paroxysm; and a light infusion of ginger has contributed to the same end.

Perfect quietude, a free access of pure air, the supine posture, and frictions of the extremities will assist the heart in recovering its accustomed rate of action.

The sympathy that exists between the seat of the disease and the muscles of the arm affords an opportunity for the employment of certain local remedies, which have appeared to be beneficial in shortening the duration of the paroxysm, or abating its intensity.—Such is the immersion of the arm, up to the axilla, into water of such a degree of heat as will impart a comfortable or pleasurable sensation. Friction applied at the insertion of the deltoid muscle with the oleum tera-

binthenæ camphoratum, or with laudanum, may tend to relieve the parts from which the sympathy radiates, or a sharp sinapism may contribute to the same end.

Should the paroxysm at any time assume the appearance of actual deliquium, it may be expedient to apply the spirit of ammonia to the olfactory organ, or to sprinkle the face, neck and breast with vinegar and water, or with the sulphuric æther.

I come now to speak of the constitutional treatment; and this, I apprehend, must be purely palliative: for I am unacquainted with any medicine possessing a specific action or power over the organic vitium which is the cause of the disease. Under these circumstances, the most rational system will probably be to endeavour to preserve the different functions in a state as nearly approximating to the healthy as possible. Constant laxatives are almost always necessary. In gouty habits, absorbents and antacids will be often requisite. In every case it will be absolutely necessary to pay the most marked attention to the cuticular and renal emunctories, and to preserve these outlets in a state of the utmost

freedom. But I think it must be obvious that it is in vain to dilate on these points. The arrangement of every measure of this kind must be entrusted to the good sense and discernment of the physician. He will find it necessary to make himself master of the patient's constitution, of his habits and modes of living, and of the nature and tendency of any simultaneous disease. He will therefore feel the necessity of regulating his plan of treatment, not by general rules previously laid down for him, but by his own view and conception of the individual case before him.

The disease appears in most instances to be connected with vascular plethora, and in some, with the suppression of habitual discharges. In the former case, issues are clearly indicated and have occasionally been useful. I believe, however, that we are often disappointed in the efficacy of issues from a want of proper management, in consequence of which they fail to afford that copious discharge which it is our object to procure. I would therefore propose, in place of an issue, a deep and extensive seton, inserted

between the ribs, opposite to the apex of the heart.

In the other case alluded to, that of suppressed discharges, every effort should be tried to re-establish any that may have been suspended. In the particular case of the suppression of the hæmorrhoidal discharge, if this cannot be again brought about, the occasional application of leeches to the verge of the anus will be extremely advisable. That vicarious evacuation is known, in many instances, to obviate the pernicious consequences of the suppression.

Exercise is the next subject of consideration, the utility of which in preserving the various functions in a healthy state is well known; and its tendency to dissipate and throw off the thinner humours is a circumstance highly to be sought after in this disease. If some effectual means are not put in practice to eliminate these humours, we shall have great reason to dread serous effusion into some of the great cavities. For this purpose, walking is preferable to every other mode of exercise. But in the present case, this is out of the question; for all muscular exertion is likely

to induce the paroxysm. It happens however, fortunately, that equitation does not bring on the fit, at least if the rider will be content with a moderate pace. There can be no doubt therefore of the propriety, and indeed the necessity, of the patient availing himself of this advantage as much as circumstances will permit.

The only circumstance of treatment that remains to be considered respects regimen; and it is perhaps the most important of any. We have seen that the disease appears to be connected with a plethoric state of the system and with obesity:—that the great majority of the subjects of it have belonged to the better ranks of society, who were in the habit of sitting down every day to a plentiful table, in the pleasures of which they may have indulged to a greater extent than was suitable to the tendency of their constitution:—that every thing which hurries the circulation or urges the machinery by which that function is carried on beyond its capacity of performance seems to create or to favour the tendency to paroxysms:—These considerations appear to me to suggest the propriety of a

regimen very low and abstemious. But in fact, this part of the subject is involved in considerable obscurity, because we are not guided by the light of experience. It is obvious however that we must not altogether overlook the patient's age, his established habits of living, and the actual necessities of the stomach and digestive organs. The synchronous existence of other diseases will also demand attention. I can therefore only repeat that the physician must study attentively the character, if I may so speak, of the particular case before him. But if serious objection do not arise from any of the considerations stated above, and still more, if the disease be not thoroughly established, I should be inclined to propose a regimen of the most abstemious kind, exclusive, in a great measure, of animal food and all fermented drink. It will however be obvious that if the disease be of long standing, it would be nugatory to expect that derangement of organic structure can be overcome by dietetic observances :—

Principiis obsta : sero medicina paratur

Cum mala per longas invaluere moras.

But if the disease be merely incipient, the patient young and his constitution unbroken, I would earnestly recommend the adoption of a plan of abstemiousness and self-denial. Experience however has taught me that it is in vain for men to begin such a system of living, unless they are endowed with a certain firmness and constancy of mind, such as are necessary to enable men to forego Sybaritic gratifications, and to prefer a prospective advantage to a present enjoyment. Should, such a plan be adopted with firmness, and pursued with constancy, I should anticipate ultimate advantage. It will, however, be necessary to carry in remembrance the usual progress of organic disease, and the slowness with which it can be obviated or corrected: and it will be peculiarly fortunate if the march of the disease shall not have a tendency to establish as a medical axiom, the truth of that observation which the Roman historian has advanced as a moral reflection: "*Natura tamen infirmitatis humanæ, tardiora sunt remedia quam mala.*"

But whatever may be the nature of the fare on which the patient shall live, one

circumstance is clearly of the greatest importance, namely, that a very small quantity of food should, at any one time, be introduced into the stomach, so that this organ shall never be put into a state of distension. The tendency of the paroxysms to attack after dinner is matter of observation. This may be occasioned partly by the pressure of the stomach on the aorta descendens, by which the action of the heart becomes embarrassed, and partly by the continued influx of a stream of chyle into the left sub-clavian vein, by which the heart is urged to action. I should therefore earnestly recommend it to any person labouring under this disease, never to think of making any thing like a regular meal. It will be much better that he should take a small quantity of light nutriment every three or four hours, by which the inconveniencies of a distended stomach will be avoided. It is altogether astonishing with what a small quantity of nutriment and with what little stimulation life may be sustained. The treatment advantageously adopted in another disease of the heart or large vessels, *aneurism*, and which is generally known

amongst medical men by the name of *the method of Valsalva*, affords a sufficient illustration of this fact.

The best drink will be pure water, soda-water, barley-water, whey, or in some cases an infusion of those herbs which combine aroma with bitterness. In certain cases, it may be expedient to allow a little of that brisk acidulous beverage called ginger-beer.

Before I conclude the subject of treatment, I think it expedient to advert to some things which ought to be sedulously shunned, and against which it therefore becomes the duty of the physician to caution his patient.—Such are cold or heat, in extreme; strong passions and emotions; strong potations and muscular exertion.

When cold is applied to the surface of the body or to the extremities, its effects in all organic diseases of the heart, are most pernicious: and the injury is much of the same kind, whether the cold be extrinsic or arise from an inadequate evolution of heat by the circulatory process. The constant effect of such a state of the body is an accumulation of blood in the heart or larger vessels,

which uniform experience shows to be productive of an aggravation of all the symptoms. It will be best obviated by warm clothing, by dry frictions, or by frictions with stimulating liniments, or lastly by immersion of the limbs into a tepid salt bath.

Heat in extreme may arise from the power of the sun, from crowded assemblages of people, or from over-heated rooms. From whatever source it may arise, it will be dangerous. It acts by stimulating the heart and arteries.

The effects of strong passions and powerful emotions have been sufficiently illustrated in the preceding parts of this discussion. They may operate in a twofold manner; either by hurrying the blood rapidly from the extreme parts towards the heart, or by diminishing or repressing the vital energy of that organ. Anger seems to operate in the former manner, and its fatal influence has been exemplified in the instance of H. R. Esq. and in that of Mr. John Hunter. Grief or depressing passion appears to me to operate in the latter way, and we have an instance of its effects in the case of Mr. M'Cormick.

The effects of muscular exertion, of whatever kind, in exciting the circulation and inducing paroxysms, have been already sufficiently explained and illustrated. The effects which may sometimes follow such exertions, where the heart or great vessels are affected with organic disease, may be appretiated by the following case from Morgagni, de sedibus et causis, Epist. 26. The restraint which it suggests, is sufficiently obvious, and I shall leave the reader to make his own use of it.

“ Ad hanc meretriculam cum quidam ingressus esset scortator, et post modicum tempus egressus confuso et turbato vultu; ipsa vero, duabus aut tribus interjectis horis, non appareret: vicini, qui hæc animadverterant, introgressi, non mortuam modo, sed et frigidam invenerunt, jacentem in lecto ea corporis figura, ut dubitari non posset, quo in opere interiisset. Pericardium distentum adeo ut per inflictum vulnusculum serum exsiluerit. Multum autem inerat; sub eoque niger, et firmissime concretus sanguis, cordis faciem operiebat.—Ubi ventum erat prope valvulas semilunares, quæ strigosæ videbantur, semidigiti intervallo supra eam quæ tenet poste-

riora, erat orificium, quod apicem digiti pollicis admisisset, per quod aorta cum subrotundo aneurismate communicabat, sacculi forma ad ipsam appensi. Ruptus autem in summo fuerat a sanguine illinc in pericardium exundante."



QUERIES.

There are few subjects of scientific investigation that can be completely cleared from all doubt or obscurity, even by the most ample discussion. This is the case in the present instance; and as it may tend to facilitate future investigation to indicate the precise points to be ascertained, or doubts to be removed, I shall take the liberty to subjoin three queries, the satisfactory elucidation of which will render our knowledge of the disease more complete.

1st. What is the proper place of this disease in nosological arrangement? Dr. Parry has endeavoured to introduce it into the Cullenian system under the genus, *Syncope*, and the species, *Cardiaca*. Future observation must decide whether this is altogether correct.—

If it shall be ascertained that, during the paroxysm, the action of the heart is uniformly diminished or for a time quiescent, we may perhaps admit the generic character. With respect to the specific, a difficulty occurs.—That part of the specific character “cum palpitatione cordis vehementi in intervallis” is totally inapplicable. In order to obviate this difficulty, Dr. Parry wishes to split the species into two varieties which he proposes to designate by the trivial names of *Anginosa* and *Palpitans*. This is taking a great liberty, but I will not say an unnecessary one, with Dr. Cullen’s arrangement, which will not admit the disease under the *Syncope Cardiaca* without an entire alteration of his definition. The trivial name *Anginosa* seems objectionable in two respects; first, because the disease has no habitude whatever with any of the *Anginæ*; and secondly, because the term “*Anginosa*” is barbarous. It is, however, easier to start objections than to propose remedies. These nosological subtleties are perplexing and unprofitable, and I shall not prosecute them.—They must however be unravelled by any one who shall undertake the construction of

a new nosological arrangement, or the correction and improvement of the old.

2d. If there be, as I have endeavoured to show, a real ossific diathesis present, what are the causes that produce or govern this deposit of the calcareous phosphats in the arterial coats or in cartilages? It will be necessary that we should form precise notions on this head before we can pretend to assign the appropriate remedies.*

3d. Is our knowledge of the remote causes of this disease such as to enable us to classify the *liable* and the *exempt*? I fear not.—But when we cannot arrive at truth in its perfect and satisfactory form, let us at least endeavour to make approximations towards it. I imagine the persons peculiarly liable are those who are of full and plethoric habits, who live luxuriously, or at least very plentifully, and who do not use a sufficient quantity of exercise. If there be on the other hand any persons possessing an exemption from the disease, total or partial, I think we shall be most likely to find them among the poor,

* Note E.

the laborious, those who use strong exercise, the foot soldier and the female sex. With respect to the poor and laborious, I am not acquainted with any instances of the disease occurring among them. As to the foot soldier, the only fact I know with respect to him is the observation of Senac, who says that organic disease of the heart is rarely met with among that class of persons. Among women, I have not met with any authenticated instance of the disease. It may be observed that there is a certain analogy existing between the diathesis prevailing in this disease and the aneurismal. In this latter, the appearance of osseous deposit in the coats of the arteries is, I believe, not very unusual. Dr. Baillie speaking of the comparative infrequency of aneurism among women, says "the arteries
" in this sex appear to be less liable to these
" diseased alterations of structure which pre-
" dispose to aneurism."

Corvisart also bears testimony to the comparative rarity of organic disease of the heart in the female sex ; but his mode of accounting for the fact appears to me altogether vague and unsatisfactory, viz :—

“ La délicatesse, la souplesse, la rigidité
“ moins active par conséquent de leurs fibres,
“ des humeurs plus douces peut-être, une
“ énergie d’ossification moins grande, une
“ mobilité plus grande et par conséquent
“ des passions plus vives, mais des affections
“ moins profondes, moins fixes, rendent raison
“ de la fréquence moins grande, &c.”*

NOTE E.

There is no subject relating to the animal economy more curious or more important, than this one of the deposition of phosphat of lime in various parts of the animal machine, from which a variety of diseases seem to take their origin, or with which at least they seem to be connected: and it is not less curious that this substance, whose developement is ruinous to the human frame, should be a product by no means peculiar to the operations of that frame. On the contrary, the laboratory of nature has furnished it in vast quantities. It is found composing the entire mass of hills in certain districts in the jurisdiction of Truxillo in the Spanish province of Estremadura† Its mineralogical history, however, is foreign to our purpose. We are to consider it only in its relation to pathology, in which point of view it claims the strictest attention from those physicians who cultivate animal chemistry. Some times it has been found deposited in the pineal gland in

* Note F.

† Chaptal’s Chemistry, Vol. 2.

cases of insanity.* Sometimes it is deposited in the bladder, forming one of the constituents of urinary calculi. On some occasions, it is developed in the lungs, where it seems to give rise to, or at least to be connected with, a particular species of consumption. At other times, we find deposits of this substance in the liver, the salivary glands, &c. It is important to remark, that the gouty concretions, commonly called chalk-stones, are of a different nature. They consist of urate of soda. This throws some light on what was observed in a former part of this dissertation, that the *Angina Pectoris* and *gout* have no necessary relation with each other. It is obvious that the knowledge of the circumstances which influence this deposit, and of the means by which we may be enabled to acquire a control over them, are matters of the last importance in the practice of physic. No object can be more deserving of the attention and research of the chemical pathologist. At present, the circumstance that seems most striking and obvious to us, is that those deposits seem for the most part, connected with an increase of vascular action in the part where they are deposited; and I should be inclined to consider them as the effects of such increased action. A fact extremely curious is mentioned by Boerhaave with respect to the deer kind. He says that ossification about the origin of the aorta, is always found in those who have been killed after long and severe hunting; but never in the domesticated animals, "*cervis captivis quos in vivariis suis aluerant. Unice enim in iis animalibus reperitur quæ frequente cursu corpus exercent.*"

* Haslam on Madness, page 88.

NOTE F.

When I consider the circumstances, habits and modes of life of the two classes of persons whom I have denominated the *liable* and the *exempt*, a question arises, what peculiarity can we assign to those habits and modes of life, which might reasonably be presumed to be capable of influencing the liability or the exemption?

A conjecture here offers itself to the mind, that there may possibly exist some connexion between this liability or this exemption, and the habitual state of the cuticular discharge. This conjecture is founded on the following considerations:—

1st. The persons included in the class of the *liable* would seem, from their habits and modes of life, less likely to preserve the excretion by the skin in a constant state of freedom and activity. Those on the other hand belonging to the class of the *exempt*, appear likely, from their habits of labour, of exercise and of activity, to have the cuticular discharge uniformly preserved in a steady, regular and healthy state.

It must be acknowledged with regard to women, that this observation is not applicable to them. Let us, however, remember the great smoothness, softness and delicacy of the female skin, and consider whether, from these circumstances, we should be justified in inferring its greater permeability. Let us at the same time recollect that, generally speaking, women are less exposed to the action of those causes which have a tendency to restrain the excretory function of this organ.

2d. There is a species of consumption that is connected with an osseous deposit in the lungs. This was well known to Morton and the early writers on consumption. I am inclined to believe, that it is more noticed by those writers

who describe the consumption of our northern latitudes, than by those who have occasion to speak of consumption, as it prevails in the more southern countries. If this be the fact, the inference I would draw is, that this peculiar species of consumption is a disease of the northern climates.

3d. It appears not to admit of any doubt, that climate materially influences some of those diseases that are attended with a deposit of the phosphats or carbonats. Thus Dr. Marcet has shown that calculus of the bladder is by no means so frequent in the tropical or southern countries as in our northern latitudes.

In a former part of this dissertation, it appeared to be a reasonable presumption that the *Angina Pectoris* was more rare in France and the meridional regions than in the British islands.

4th. It may assist us in forming a conception of the manner in which a diminution or restraint of this discharge may contribute to give origin to those osseous deposits, to reflect on the nature of the substances that are emitted by the skin. These are water, carbon and an oily matter; and sometimes an acid supposed to be the phosphoric, phosphat of lime and urea.* Now phosphat of lime is the chief constituent of these bony depositions.

Whether the circumstances to which I have now referred shall be considered sufficient to indicate an established relation between the habitual state of the cuticular discharge and the formation of these osseous deposits, is a point which I shall submit to the judgment of the discerning reader. I beg, however, it may be remembered that nothing advanced in this note is intended to carry with it any greater weight than that which belongs to plausible conjecture.

* Thompson's Chemistry—Vol. 4.

CONCLUSION.

I shall now conclude what I have to say on this subject by a suggestion, admissible, I trust, where more certain ground cannot be taken. I have endeavoured to shew that there is, on many occasions, an *ossific diathesis* prevailing in the human constitution, of which the *Angina Pectoris* is one instance. We are but too well aware, that on many other occasions, there is a *calculous* or *lithic diathesis*. These two states of the frame have one feature in common, namely, that both are attended with a deposit of the calcareous phosphats, although the manner in which that is made is very different in the two cases. We know perfectly well that the treatment of calculous complaints remained for ages involved in utter darkness, and was in fact absolute empiricism. But by the application

of chemical science to the analysis of the calculus itself, and of what Mr. Brande has denominated the Medico-chemical treatment to the disease, the distresses of humanity have been alleviated, and a complete mitigation obtained of what was previously a remediless and a hopeless disease. This treatment is perfectly scientific, being founded on a complete chemical analysis of the various morbid deposits found in the bladder, as well as on a perfect knowledge of the chemical powers of the remedies employed, by which they are adapted to the end in view. Thus in some cases, alkaline remedies afford the greatest relief, while others are most successfully treated by acids. I entertain an opinion that a similar application of chemical principles, made in a manner equally scientific, to the investigation of the ossific diathesis and the analysis of the morbid deposit, may lead to the knowledge of remedies calculated to correct the diathesis, or perhaps to remove the deposit. The subject, no doubt, is one of great difficulty, and requires qualifications, opportunities and local resources which fall to the lot of a small proportion of professional

men. When, however, the opportunity shall occur, I would earnestly hope that the investigation would be entered on; and in the hands of such men as a Wollaston and a Prout, a Marcet and a Brande, the hope would by no means appear presumptuous that the causes which influence these deposits may be ascertained, and remedies capable of exerting a salutary power over them discovered.

DISSECTIONS
OF
TWO HABITUAL DRUNKARDS.

FROM THE TRANSACTIONS OF THE ASSOCIATION OF FELLOWS
AND LICENTIATES OF THE KING'S AND QUEEN'S COLLEGE
OF PHYSICIANS IN IRELAND.—VOL. 1.

Read November 4, 1816.

THERE is no tendency of the mind which it is more expedient, on all discursive subjects, to regulate and to restrain, than the tendency to generalize. Man is impatient to arrive at general conclusions; and the establishment of *principles* is gratifying to the pride of human intellect. But it is a tendency against which it is peculiarly incumbent on those who are engaged in pathological inquiries, or indeed in the investigation of any department of knowledge, to arm themselves

with a degree of caution. It must be obvious that the generalization to which I object is that only which is founded on an induction not sufficiently copious. This reflection is suggested by the perusal of the two following dissections. The persons who were the subjects of them, were both habitual drunkards: one would therefore expect, reasoning *a priore*, to find the appearances in both bearing a very close resemblance; but they were in a considerable degree diversified. There can be no question, that the same cause, operating under the same circumstances will always produce the same effect: but the great difficulty, for the most part, is to discern, and to ascertain wherein the circumstances under which causes are brought into operation are the same, or different. In the present instance, this difficulty does not exist to an unlimited extent. In the one case, the liver is reduced to less than half the natural size, and studded with tubercles; in the other, it is increased beyond the natural size, and studded with tubercles: but there is superadded what I consider as a real schirrus of the stomach. Certain differences in the circumstances

of these two persons are easily assigned. One, for instance, was aged 63; the other, only 27: in one, the habit of intoxication had been completely established for fifteen years or more: in the other, only for two or three years. How far this diversity of circumstances can be applied to illustrate the diversity of observed appearances, or what share must be ascribed to other circumstances not so obvious, nor so easily assignable, I shall leave to the learned members of this association to decide. I think, however, that it may not be unsuitable or ill-timed, to quote an observation of Dr. Baillie on this subject. Speaking of the common tubercle of the liver, he says:—
“ This disease is most frequently found in
“ hard drinkers, although we cannot see any
“ necessary connexion between that mode of
“ life and this particular disease in the liver.
“ It happens, however, very commonly, that
“ we can see little connexion between cause
“ and effect, in changes which are going on in
“ every other part of the body.” To which observation of Dr. Baillie, I shall take the liberty to subjoin a reflection of Cicero, “ Sufficit
“ si *quid* fit intelligamus, etsi *quomodo* quid-
“ que fiat ignoremus.”

CASE I.

July 12th, 1808.

Patrick Mooney, aged 27, a journeyman baker, and accustomed for the last two or three years, to indulge in long protracted fits of drinking, as often as he could command the opportunity. He had been liable, for a considerable length of time, to a variety of stomach complaints, such as acidity, flatulence, vomiting, &c. These were exceedingly aggravated about six months ago, by a long and hard drinking of rum: his feet and legs now swelled, and within the last month, he has been twice tapped. He died this morning, and I opened the abdomen twelve hours after death. The only very striking morbid appearance was in the liver; but the state of that viscus was very remarkable. It certainly was not one half its natural size, perhaps not much more than one third.

Its substance, when pressed between the fingers, felt perfectly hard and rigid, and was throughout full of small hard tubercles, of the size of a garden pea, some of them larger; they were of a dark brown colour. The substance of the liver being cut into, shewed its parenchyma as completely beset by these, as its external surface was. None of them shewed any tendency to suppuration. The gall bladder had a shrunk and shrivelled appearance, and contained scarcely any bile. The pylorus appeared rather thick, and indurated.

CASE II.

June 18th, 1812.

James Finlay, aged 63, a shoe-maker. He has been for the last fifteen years an habitual drunkard, and for a great proportion of that period, had enjoyed better health than could have been presumed or anticipated from his habits of life. Within the last eighteen months, however, he began to be affected with a variety of stomach complaints, such as loss of

appetite, nausea, acidity, flatulence, obstinate costiveness, pyrosis and vomiting. These continued to increase; and for the last six months, scarcely any solid food could be taken; and the little that was occasionally swallowed, was almost immediately rejected by vomiting. Wine or spirits, undiluted, remained on the stomach better than any thing else. A hard tumour, or ridge, appeared now to stretch across the epigastric region, from the right to the left hypochondre; and the feet and legs became œdematous. For the last four days, he lay in such a state, that it was often difficult to say whether he was living or dead. Neither pulse nor respiration were to be discerned, except perhaps twice or thrice in the twenty-four hours, and then only by the most minute attention.— This death-like state, “consanguineus lethi” “sopor,” was at the end of four days, exchanged for a placid, but real death. Dr. Macartney, the professor of anatomy in this University, who was casually on a visit in the neighbourhood, had the kindness to open the body about sixteen hours after death.

On cutting through the integuments, there

was a considerable serous effusion into the cavity of the abdomen. The liver appeared considerably enlarged, especially the left lobe, on the surface of which, a number of tubercles appeared. These, when cut into, were of the size of a hazel nut, of a yellowish colour, and a granulated appearance, but did not contain any pus. None of these tubercles were discoverable on the surface of the right lobe; but when a section of it was made, its parenchyma abounded with them. The liver stretched quite over into the left hypochondre. The gall bladder was pale, small and quite empty. The spleen appeared rather more rigid than usual, and the entire viscus was not one half its usual size; yet when a section of it was made, its internal structure did not appear materially altered. But the most remarkable circumstance of this dissection, was the condition and appearance of the stomach: this organ was so small and contracted, that its cavity would not, I think, have contained a turkey's egg. The coats of it were thickened, and indurated in a very extraordinary manner. Their original organization seemed entirely obliterated, and they

had all coalesced into a solid homogeneous substance, which in some places, was half an inch thick; in others, three quarters of an inch. This substance, in structure and appearance, resembled cartilage, softened, more than any thing else I can compare it to. The pylorus with difficulty admitted the end of the little finger. The interior surface of the stomach, abounded with several appearances, to which (for want of a better) I shall give the name of fungous excrescences. Some of them were broader than a tenpenny-piece, and from their surface there oozed a dirty brownish fluid.

I conceive this to be the same appearance to which Dr. Baillie, when speaking of the schirrous stomach, alludes in the following passage:—" Sometimes the inner membrane
" of the stomach throws out a process, which
" terminates in a great many smaller processes,
" and produces what has been commonly
" called a fungous appearance."

CASE
OF
GOUTY AFFECTION.

FROM THE TRANSACTIONS OF THE ASSOCIATION OF FELLOWS
AND LICENTIATES OF THE KING'S AND QUEEN'S COLLEGE
OF PHYSICIANS IN IRELAND.—VOL. 1.

Read January 9, 1816.

June 19, 1808.

THE Rev. J. T. aged 33, has had two attacks of regular gout, which he inherits. The first occurred about four years ago, at which time he had a regular fit which continued fixed in the extremities for a month. About three years ago, he had a second fit, in all respects regular, which lasted for a fortnight.

About the first day of May last, he complained to me of a severe and distressing

pain in the lower part of the spine, which he said had been uncommonly troublesome, for the last three months. On the 6th of May, he had an attack of gout in the right great toe, where the inflammation lasted forty-eight hours. It was then transferred to the great toe of the other foot, and having subsisted there about thirty-six hours, it disappeared. A slight degree of swelling, with much tenderness, remained for some days.—As long as the feet were affected with the gouty inflammation, the back remained free from pain ; and when the inflammation receded from the extremities, the back became again violently affected. The pain extended to the hip joint on each side, and occasioned a considerable degree of lameness in walking. Symptoms of constitutional derangement now supervened, such as sickness and loss of appetite, frequent sourness of stomach, excessive flatulence, and frequent bilious vomitings.—When matters had proceeded in this train for about five weeks, a swelling appeared below the left hypochondre, rather higher than the umbilicus, but extending towards it. This tumour appeared at first to come

and go, or at least to increase and diminish in a remarkable manner. It was painful on pressure, impeded full inspiration, and when pressed upon, gave that crepitus which is indicative of the existence of flatus underneath. For the last five or six days, it has become very fixed and permanent. It is now as broad as the hand, and extremely impatient of pressure. My learned friend, Dr. M'Donnell, of Belfast, was this day called into consultation. His opinion with respect to its nature and seat was sceptical, but he quoted an observation of Doctor Rush, of Philadelphia, that he had frequently observed the spleen to vary considerably in size, from time to time. I ventured to suggest that it was seated lower than the spleen; as there was a space of two inches between the margin of the ribs, and the superior edge of the tumour. I had an idea that it was seated in the arch of the colon, more especially, as pressure or friction generally excited that crepitation which confined flatus gives. But it must be acknowledged, that, as to its nature and exact situation, much uncertainty prevailed.

Medicine had not hitherto been productive of any advantage ; and in detailing the further progress of this disease, I do not consider it necessary to exhibit the prescriptions, with their effects. In a case in which I apprehend no prescription could have been successful, such a detail consumes time, without conveying instruction. I shall, however, observe in general, that frequent leeching, the maintenance of a purulent discharge from the part, and keeping the gums tender for some time, by means of calomel, constituted the leading features of the plan of treatment, and that urgent symptoms were palliated in the manner that seemed most expedient.

June 25th.—This morning, a considerable degree of pain, with a sense of heat and throbbing, have come on in the great toe, which is perceptibly inflamed.

26th.—The symptoms of inflammation in the great toe having subsisted about sixteen hours, were then translated to the great toe of the other foot, from whence they soon receded.

27th.—The effort was made to favour the natural exertions of the constitution, by si-

napisms and stimulating fomentations, applied to the extremities. This was several times repeated, but always without success.

28th.—Great increase of pain in the tumour, so that the patient cannot lie on the left side, owing to the pressure to which it is then exposed; neither can he lie on the right side, owing to the sense of weight and dragging, excited by that posture. Pain of the back, though urgent, yet obscured by that of the tumour, which increases in size, and is now distinctly to be felt immediately above the umbilicus, extending to the left side. Much crepitus on pressure. Some bilious vomiting this morning. Pulse 106.

29th.—About this time, he was visited by my highly esteemed friend, Doctor Crawford, of Lisburn, with whose sagacity, discernment, and sound judgment, frequent intercourse has rendered me familiar. He, however, felt the same difficulties, with respect to the nature and seat of the tumour that I did. There is now great increase of pain in the tumour, which the patient thinks is enlarging in a direction downwards, and backwards, accompanied by a sense of fullness and tightness

that greatly impede respiration. Great debility. Pulse, as he sits upright in bed, 132. He lives now entirely on milk, ripe fruit and bread, the only aliment which the stomach retains.

July 9th.—For the last two days, he has complained much of a troublesome sense of fullness and tension in the abdomen, in which I fear there is some obscure fluctuation.—Urine very scanty. Severe palpitation from the slightest exertion. Pulse in the recumbent posture, 124: in the upright, 136.

10th.—Was attacked early this morning by lancinating pains, of uncommon severity, through the tumour. Tension and tenderness of the part very great. When he attempts the upright posture, he finds the respiration greatly affected, and becomes faintish. General tension and fullness of the abdomen greatly increased. Fluctuation no longer obscure, notwithstanding the use of digitalis, the supertartrate of potass and other diuretics. Pulse in the erect posture, 144, respiration 25.

14th.—The tension of the abdomen, and the various distresses connected therewith, having increased to such a degree as he

declared to be quite intolerable, an attempt has been made, at his own urgent desire, to afford some relief by the paracentesis, and about five quarts of serum have been discharged. But the relief is altogether imperfect.

18th.—Died this morning at four o'clock.

DISSECTION.

The body was examined ten hours after death. I was assisted in the examination by my friend, Mr. Salmond, staff surgeon.

When the abdominal cavity was laid open, the attention was instantly arrested by an immense tumour which presented itself. It was of the size nearly of a man's head, extending from the left hypochondre, to the os ilium. It appeared originally to have sprung from the mesentery, but was now intimately connected, by adhesion, with all the circumjacent parts: it was of a whitish colour, internally soft and pulpy, and on a general and distant inspection, exhibited very much the appearance of brain. It appeared to me to belong to that species of tumour, to which Mr. Abernethy has given the name

of *medullary sarcoma*: in this opinion Mr. Salmond perfectly coincided. The seat of this disease is for the most part, external; and I am uncertain whether there are on record any instances of its existing, as an original disease, within the abdominal cavity. A very usual seat of it is the testis, in which situation it has been denominated by some, the soft cancer, a term which Mr. Abernethy considers very objectionable, as conveying an erroneous idea; for the disease, though perhaps equally destructive, is unlike cancer in its nature and progress. Mr. Abernethy has given an account of two cases in which the disease was propagated from external parts, through the medium of the lymphatics, to the glands within the abdomen. In one of these cases, the disease had commenced in the testis—had communicated from that to the inguinal glands, forming on each side a tumour, as large as a man's head; and on opening the body, the pelvis was almost filled with similarly diseased glands; and the vertebræ were hidden by others, as high up as the diaphragm, and which contained a fluid resembling cream. In the other

case, a tumour had formed on the front of the thigh, and the inguinal glands became enlarged. The body being examined after death, the internal iliac glands more than filled one side of the pelvis, rising out of it in such a manner as to distend the lower part of the abdomen into a great tumour, which had been very remarkable during life. The tumour of which I am now giving some account, appeared to me to have derived its origin from the glands of the mesentery, some remains of which, I thought were still discernible, but so confusedly blended with other parts, so altered in structure, and defaced in appearance, that it was with some difficulty they could be recognised as the remains of a glandular structure.

On being handled, there issued from different parts of the tumour, a fluid in colour and consistence resembling cream. The tumour had a very broad adhesion to the peritonæum on the left side of the spine. It was also connected with the colon. It was cut out as completely as its universal connexion with the neighbouring parts rendered that prac-

ticable, and being suspended on a steel-yard, it weighed nearly six pounds.

On cutting into it, the kidney was found imbedded in its centre; and what is very remarkable, the structure of that viscus was perfectly entire. The caput cæcum coli was amazingly enlarged, and the enlargement consisted in a great quantity of a pulpy substance, the same in appearance as that which constituted the mass of the tumour already described.

The whole tract of the intestinal canal exhibited the most decisive marks of general inflammation. Universal adhesion had taken place through all the viscera, so that it was a matter of extreme difficulty, or rather an impossibility to disentangle them, the one from the other. The convex surface of the liver adhered through its whole extent to the peritonæum, the diaphragm and the stomach.

The liver itself was unusually large, and extended to the left hypochondre; but its organization appeared to be entire.

The gall bladder was filled with a black and viscid bile, in colour exactly resembling tar, but of a thinner consistence. The spleen

was of the ordinary size, and its structure was no way diseased: it had a very extensive adhesion to the diaphragm and the adjacent peritonæum: the omentum did not appear distinctly as a separate membrane, owing undoubtedly, to the very intimate adhesions formed between it and the other viscera.

The adhesions between the viscera were so extensive, indeed so universal, and there were so many livid blotches of a gangrenous appearance, and of great extent, scattered over the whole tract of the intestines, that these circumstances, added to the tumours already described, presented a scene of universal ruin and confusion.

There was a considerable serous effusion into the cavity of the abdomen. The thoracic viscera appeared to be remarkably sound; but there was an effusion to the amount of four ounces, into the pericardium.

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I am not aware that the following records
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communicate any thing very new or very
uncommon: but I consider it as a gratifying
admirably good in itself, and in its application.

CASES AND DISSECTIONS

ILLUSTRATIVE OF

DISEASE OF THE BRAIN.

FROM THE TRANSACTIONS OF THE ASSOCIATION OF FELLOWS
AND LICENTIATES OF THE KING'S AND QUEEN'S COLLEGE
OF PHYSICIANS IN IRELAND.—VOL. 2.



In the upper region serving the animal faculties, the chief organ is the brain. It is the most noble organ under heaven, the dwelling-house and seat of the soul, the habitation of wisdom, memory, judgment, reason; and in which man is most like unto GOD.

BURTON'S ANATOMY OF MELANCHOLY.

Read January 9, 1816.

I AM not aware that the following records of diseases and dissections of the brain, will communicate any thing very new or very uncommon: but I consider it as a principle admirably good in itself, and in its applica-

tion, promotive of the interests of science and of humanity, that every professional man should contribute his quota towards a general fund, from which we may expect to derive accurate histories of disease, and faithful reports of diseased appearances after death. And surely, if there be any organ of the body whose structure in health and in disease, is more entitled to study and investigation than another, the brain is that organ; for although it may be true, to a certain extent, that the anatomist cannot, by his knife, indicate diversity of organic structure in the brains of the "lunatic, the lover and the poet, who are of imagination all compact," and that of the stupid rustic, "dull as the kneaded clay," yet it is certain, that by the healthy exercise of the functions of this organ are formed the poet, the sage and the hero; and gifted mortals are conducted in the paths of fame, of science and of glory. When on the contrary these same functions become diseased, the unhappy wretch is depressed to that level which renders the extinction of his being a blessing.

CASE I.

Chronic Inflammation of the Dura Mater.

Mr. J. L. W. (aged nearly twenty-eight) returned to Ireland from Liverpool, where he had resided for some time, on the 24th December, 1814. He then complained of a pain in his back, which he said had severely annoyed him for some considerable time.—The only disease to which he had been subject for several years, was ophthalmia, and he was a temperate liver. He did not ask any advice with respect to the pain of his back; neither did he adopt any measures for its removal. In the summer of 1815 he removed to the sea-side, entertaining a hope that sea-bathing would be effectual for that purpose. This was his own idea. After having bathed three times at short intervals, he found the pain of his back removed, but he was seized with severe head-achs. He

now thought it necessary to ask my advice; when I strictly enjoined him to desist from sea-bathing, to use a saline laxative every morning for some time, to keep quiet, and confine himself to a low diet. Perhaps this is the proper place to mention that I think it highly probable he must at this time have laboured under considerable anxiety of mind, from the unprosperous state of his affairs.—As the season changed, the head-achs became more severe, and early in November, they were very distressing. Still he continued to go about, and to attend to his mercantile concerns; but an unusual flippancy in conversation, and some extravagance in conduct indicated a certain degree of mental derangement. A diffused tumour was now observed on the os frontis, near its junction with the os parietale, in a direction above the right orbit. The tumour was of the breadth of a shilling, painful on pressure, but not exquisitely so. I considered it to be a thickening of the membrane investing the cranium.—Early in December, at a time when the weather was severe, and the ground covered with snow, he set out in order to go to

some distance on some mercantile pursuit, which he alleged to be of importance, but which appeared in a light so different to his family and relatives, that one of them followed him and brought him back, after he had proceeded seven miles. In the course of that night, I was called up in a great hurry to see him, and when I reached his house I found him stretched on the carpet in a violent convulsion. It was succeeded by stupor, from which he recovered in the course of a few hours, but he continued obviously deranged in mind for several days. When his mind cooled a little, he complained bitterly of the severity of the head-ach. Great depletion, both by blood-letting and purging, was resorted to: the tumour on the frontal bone was bled repeatedly by leeches, and a purulent discharge from it was kept up for some time. In consequence of these measures, the tumour disappeared, but the head-achs continued with great severity, and after some time (about three weeks) he had a second convulsion. The spring of 1816 was passed under much suffering from head-achs. About this period, my opportunity of observing the

disease and marking its progress, was interrupted for a considerable time; but I am assured by a member of his family, that in the month of October, the tumour on the frontal bone again appeared, and that it receded in consequence of the same applications that had before been made to it.

Early in the month of April, 1817, he again consulted me on account of head-ach, derangement of stomach, much torpor of the bowels, languor, listlessness, sleeplessness and emaciation; pulse fluctuating between eighty and ninety, and feeble. In the month of May, he became altogether deranged. For some time, he continued to write almost incessantly day and night, alleging that he was engaged in affairs of the greatest consequence to the state, and making communications to Lord Castlereagh which would enable him with great ease to pay off the national debt. In less than a month, this fit of delirium ceased. He passed the summer, complaining much of head-ach, and had at intervals two or three attacks of convulsions. In the month of March last, these became very frequent and severe; he was extremely

languid and debilitated, vomited occasionally and the bowels were extremely refractory. Though sometimes chilly, he had not either now, or at any period of his illness, any distinct rigor. He once observed that he was sensible of the failure of his intellectual faculties, and expressed the greatest apprehension of becoming again deranged. Some degree of paralysis of the left side was observed. On Friday the 26th of June, he was attacked by severe convulsions, succeeded by stupor and insensibility, which continued to recur, at short intervals, till Saturday the 4th July, when he expired.

DISSECTION.

I need scarcely observe that my anxiety to examine the state of the brain and its membranes was very great; and that opportunity being conceded, the examination was entered on ten hours after death.

When the scalp was turned back, the pericranium, at that part of the frontal bone where the tumour had formerly shown itself, had an appearance obviously morbid, and

entirely different from that of the same membrane in other parts. It was of a dull, lurid, brownish hue, but not much thickened. It adhered very strongly to the cranium. When the skull was sawed through, and we attempted to remove the sawed part, the adhesion of the dura mater, particularly at that part immediately subjacent to the diseased appearance above mentioned, was uncommonly firm and difficult to be overcome.—The surgeon, Mr. Harshaw, used the handle of his scalpel in order to detach the membrane from the bone, which being accomplished, a small quantity of pus, perhaps about half an ounce, was observed to flow. This seemed to have been occasioned by a rupture of the membrane; for no pus was observed on the outside of it. The vessels passing between the dura mater and cranium were unusually large and numerous. The dura mater, to the extent of nearly a six-shilling piece, was fully five times as thick as the same membrane in other places. On its inner surface were three distinct abscesses, each of them broader than a five-penny piece, but rather superficial. On the inner surface of the membrane, to

a considerable extent, and surrounding that condensed portion of it where these little abscesses were situated, was a distinct layer of coagulable lymph, as thick as a wafer. I imagine this effused lymph was in progress towards becoming organized, and would, had life been protracted for some time, have become condensed and thickened membrane. This layer of coagulable lymph, adhering to the dura mater in a state of inflammation, is stated by Dr. Baillie to be "very uncommon." The suppuration did not extend into the brain; but that organ, to the size perhaps of an orange, immediately beneath the diseased membrane, had become a soft and pulpy mass, in which scarcely any trace of organic structure was discoverable. In colour it resembled a custard; in consistence, it was thicker. There was an effusion of serum into the ventricles, which we calculated to exceed four ounces.

OBSERVATIONS.

1st.—This disease must be considered as a chronic inflammation of the dura mater. The other appearances stated were, I conceive, mere consequences. The length of time which the disease took to run its course (three years) is remarkable. There is some obscurity, not unattended with difficulty, in assigning the remote causes of it. When I first saw the tumour on the forehead, the idea of lues occurred to my mind; but he assured me, in the most unequivocal manner, that he had never suffered by that disease in any shape whatever. He had never been in a warm climate, had never used mercury to any extent, nor ever received any external injury on the head. I conceive that a moral affection, of a very powerful kind, must be considered as the exciting cause of this disease. His mind had been, for a length of time,

most anxiously exerted on subjects of commercial speculation, and the result of these exertions had been altogether unsuccessful.

If we could suppose that the early pain of the back, which seemed to be removed by sea-bathing, had its seat in, or was an affection of the theca of the spinal marrow, which is an elongation of the dura mater, the translation of disease from one part of the membrane to another, would be sufficiently intelligible.

2d.—When in the early part of this disease, I first observed the rising on the frontal bone, the analogy which I thought I discerned between this case and several of those related by Sir Everard Home, in the 3d volume of the Transactions of a Society for the Improvement of Medical and Surgical Knowledge, struck me very forcibly; and I entertained an idea that the remedy there recommended, namely, the free division of the pericranium by the scalpel at the tumefied part, might be resorted to with advantage. This, however, was a point on which I would not decide without surgical advice and co-operation. Some time passed away before he

was visited by an able and well-informed young surgeon, to whom I explained my ideas. But by this time, the external tumour had receded in consequence of the topical applications made to it. The decision, therefore, of the surgeon was (and I think it was perfectly correct) that as the indication of disease in the external membrane, though lately manifest, had ceased to appear, he would not be warranted in proceeding to divide a membrane, apparently, no longer in a state of disease. When, however, I reflect that the mode adopted to cure the external symptom failed finally to cure the internal disease, and further, that this tumefaction showed itself a second time after a lapse of ten months, I feel some regret that this surgical remedy was not resorted to at that period, when it was indicated, namely, before topical applications were made to the tumour. Mr. Pott, I believe, first directed the attention of surgeons to the curious and hitherto little observed propagation of disease from the external to the internal membrane of the skull; and Sir Everard Home, in the paper already referred to, points out and

illustrates a principle of which all modern pathologists are perfectly aware, viz. the wonderful and strongly marked sympathy of action existing between these two membranes, in consequence of which morbid actions in the one, the internal, may be greatly relieved by a mere solution of continuity of the other. The fact is equally valuable, whether it is to be attributed to the removal of tension and the depletion of vessels, the severing of actions morbidly associated, or to some more recondite and less understood principle of connexion on which *sympathy* is founded.— Nay, if this kind of practice had been carried to a still greater extent, and the trephine had been applied immediately over the diseased membrane, as was done in the case of Mary Loudon, detailed by the surgeon general,* I cannot pretend to say what the result might have been; but it appears to me that such practice would have been rational and warranted by the soundest principles. At the same time, it must be acknowledged that these views arise rather more out of the circumstances ascertained after death than out

* Dublin Hospital Reports.

of the phenomena existing during life: for the external indications of disease, though palpable and obvious, and even recurring a second time after an interval of ten months, were yet *mutable and temporary*.

CASE II.

If the following case possess any particular interest, that, I conceive, arises from its applicability to elucidate the manner in which morbid actions may be excited in the brain *by sympathy*.

June 10th, 1807.—Miss E. B. aged nearly six years, about five days ago was very drowsy and complained much of head-ach.—As she was known to have worms within the last four months, her mother gave her a dose of Bennett's powders, which purged her three times the next day. She was a healthy, florid, lively child previous to this attack; but the drowsiness has now continued for several days, and her head-ach is so severe, that she begs to have her head held. She refers the seat of pain chiefly to the left parietal bone.

About three weeks ago, the child happened to go into the kitchen, when a large piece of bacon fell from some height and struck her on that part of the head of which she now complains. The servants thought it necessary to conceal this circumstance from her mother; but one of the maids communicated to me, in a kind of confidence, that there was such a *bump* on the part (that was her expression) that she applied a cold smoothing iron, and afterwards brown paper soaked in vinegar, to the part, in order to abate the swelling; in consequence of which, it in a great measure subsided in twenty-four hours. Within the three last days, the child has vomited repeatedly. The pupils contract in a bright light, but in the shade they are dilated. Pulse about ninety-four and very irregular. It is unnecessary to detail the particular treatment resorted to in this case. Its progress was marked by heat of skin, intense head-ach, vomiting, stridor dentium, delirium and convulsions; and it terminated fatally on the 19th day of the month.

DISSECTION.

The head was opened in my presence, six hours after death, by the two gentlemen whose names are affixed. Neither the teguments nor the pericranium exhibited any diseased appearance at that part on which the injury had been received. The scalp, pericranium and skull were perfectly sound and firmly connected at every part. The dura mater did not exhibit the slightest mark of injury or disease. On dissecting off the dura mater (leaving it however entire at the part where it forms the longitudinal sinus) the superficial veins of the brain appeared extremely turgid and distended, which circumstance was particularly striking at their entrance into the longitudinal sinus. On the superior and middle part of the left hemisphere, a small deposition of coagulable lymph was discovered between the pia mater and the tunica arachnoidea. On dissecting down to the centrum ovale, the

lateral ventricles were found to contain a considerable quantity of serum. Little or none was found in the third ventricle, but a considerable quantity in the fourth. The whole of the effused fluid amounted, we suppose, to two ounces. The abdominal viscera were sound.

(Signed,)

ROBERT SALMOND, Staff Surgeon,

GEORGE ADAMS, Assistant Surgeon,

21st Regiment.

OBSERVATIONS.

I presume little doubt can be entertained that the external violence mentioned, was the exciting cause of this disease; and if that be the case, it is remarkable that an external injury, of no violent kind, and merely exciting such tumefaction of the integuments of the skull, as by the aid of certain sedative applications, disappeared within twenty-four hours, should be capable of exciting such an increased action in the brain itself, as terminated in serous effusion. Two other circumstances appear to me deserving of

notice, viz. that this should happen without the intervening membrane of the dura mater being drawn into morbid sympathy; and secondly, that indications of the existence of inflammatory action, which in all probability was of the sympathetic kind, should be discovered in the more interior membrane.

Would the result have been better, if the idiopathic action had been suffered to exhaust itself, without any sedative or repelling applications having been made to the seat of it?

CASE III.

The following case appears to me important in two points of view, viz. first it throws light upon the nature of one very remarkable morbid sympathy; and secondly, it shows that a disease, in reality sympathetic, might readily be mistaken for an original one.

March 11th 1811; Master Charles G——n, aged nine years, eight days ago, travelled fourteen miles on a jaunting-car. The day was very cold. When he got home, he complained of severe head-ach, and almost instantly fell asleep, lying across a chair. He

was carried to bed for the night in a state bordering on insensibility. Next day, the drowsiness was great, and he complained much of head-ach, when he could be brought to speak at all. On inquiry, I found that the head-ach had been of several days continuance, and that he had been very somnolent, vomiting frequently; pulse 110, strong and full; skin hot; tongue white and thickly crusted; some tenderness of the right hypochondrium on pressure; complains of some difficulty of swallowing; bowels have been extremely costive for some time past. He lay in bed in a profound sleep, from which it was difficult to rouse him: when roused, he did not appear to notice any thing, did not speak willingly, but said that the candle hurt his eyes.

This boy was a picture of health and strength. He never had any disease except a very inveterate cutaneous eruption some years ago. This proved very obstinate, lasted a long time, and was dry and scaly.

The nature of this case renders it necessary to detail the treatment.

R. Extract: colocynth: comp: drach: 1.

Sub-muriat: hydrarg: gr. xv.

Ft. massa in pilulas quindecim dividenda.
Sumat duas omni bihorio donec alvus dejecerit.

12th.—All the pills have been taken, together with a considerable quantity of the infusum sennæ, without producing any effect on the bowels. An enema this morning produced one stool, very black and costive, and intolerably fetid. Frequent stridor dentium; complains much of a candle offending his eyes; stupor very great; pulse eighty, strong but variable.

Perstet uti pilulis, addito pulvere Jacobi.
Repr. etiam infusum et enemata.

Adhibr. emplastrum cantharidis capillitio abraso.

13th.—Pulse ninety-six, strong and full.—After having taken ten more of the pills with infusion of senna, he had two enormously large, very black and fetid stools. During the shaving of his head, and the putting on of the blister, he was so stupid and insensible as to make no inquiries, nor did he take the smallest notice of what was going on. When the bowels began to act, and the blister to rise, these appearances began to abate, and have at present considerably subsided. Eyes

not offended by a candle. Blister discharging very freely.

Continr. pilulæ et infusum.

14th.—Six large stools since last report, which are more natural, latterly, in respect of colour and fætor. Pulse ninety, but neither so full, nor so strong as yesterday. The boy has within the last two hours been cheerful and talkative, and shown some inclination for food.

16th.—Convalescent.

OBSERVATIONS.

This case appears to me important, both in a pathological and practical point of view. It seems to me that the original seat of disease was in the digestive organs, and that the great affection of the brain, amounting nearly to coma, was dependent on the sympathy existing between these remote parts of the human machine. When the disease in the primæ viæ was overcome, the healthy function of the brain was restored. The blister, no doubt, appeared instrumental towards this effect. Indeed, I have little doubt, that a state of

the brain was induced, which, though sympathetic, might, if neglected, have led to all the evil consequences of idiopathic disease; and it appears to me highly probable, that this case would, under neglect or mismanagement, have terminated by a serous effusion into some of the cavities of the brain. Nay, I will go one step farther, by declaring my firm conviction, that many cases of hydrocephalus are induced by a morbid condition of the chylopoietic viscera, and still more especially of the liver.

CASE IV.

The inference which I have just drawn, will, I apprehend, be illustrated and corroborated by the following case and dissection.

October 12, 1807—Miss Margaret G——y, aged four years, has always been a weakly, delicate, and puny child, with irregular bowels and a tumid abdomen. At present, the cervical glands are enlarged and indurated.—Some months since, she was observed to pass ascarides frequently. About twelve days ago, it was observed that she had lost her appetite

and spirits, and become very heavy and drowsy. Four days after, she began to vomit occasionally, and the vomiting has recurred at least twice daily since that time. She was costive from the beginning, and the abdomen prominent and hard. Her father observed, that when the bowels were opened by injection, the stench was dreadful. She has complained much of her head, but has not (to the observation of those around her) shown any intolerance of light, nor screamed out of her sleep. Three days ago, her father observed the pulse to be fifty-four; to-day, it is extremely irregular both in frequency and strength, fluctuating between eighty and a hundred; face flushed; skin hot; much stupor and insensibility, so that the child does not attempt to answer any question whatever, and on being carried into the open air, no object excites the smallest attention or interest; breath extremely fetid.

It appears quite unnecessary to detail the treatment or the subsequent symptoms. The child died on the 15th day of the month, and her father, a man of good sense and

benevolent views, had a wish that I should ascertain the morbid appearances.

DISSECTION.

The examination took place seven hours after death.

On placing the head in the proper position on the table, a quantity of a fetid fluid, exceeding two ounces, ran from the nostrils: it did not appear to be pus, neither was it blood: it resembled the grounds of coffee more than any thing else.

When the top of the cranium was removed, the vessels of the dura mater were very large and turgid. The vessels on the surface of the brain, and more especially between its convolutions, were greatly distended with blood. On turning aside the falx, and cutting down in a cautious manner to the corpus callosum, we found that every one of the ventricles, examined in succession, one after the other, was distended with a clear transparent serum, which being saved in a saucer, the whole quantity exceeded three ounces. The membrane lining the ventricles was ex-

trremely vascular, and exhibited the appearance of a beautiful net-work, such as would be formed by artificial injection with a coloured material.

In the abdomen, the liver was unusually large; and the mesenteric glands very generally in a state of enlargement and induration; three or four of them contained a cheesy or curdy matter.

OBSERVATION.

The only observation I have to make on this case, has been in some measure anticipated. I conceive that the first link of the morbid catenation was in the chylopoietic viscera; the last, in the brain.

CASE V.

The following case appears to me both curious and interesting. It is an instance of a disease which, fortunately, we do not often witness. If we must give it a "local habitation and a name," we must, I think, refer it to the genus "apoplexia" of Dr. Cullen:

and it belongs, in his arrangement, to the species "venenata." It is the "apoplexia temulenta" of Sauvages.

April 22, 1810.—Master E. C——, aged nine years, a fine, healthy, lively boy, left his father's house, on the evening of Easter Sunday, in company with the servants, who were going to a meeting of the common people known by the name of a *Patron*. At this place of vulgar dissipation and amusement, the servants unfortunately gave the boy some whiskey; how much is uncertain; but from all the information I could gain, the quantity was by no means such as could have led to any apprehension of effects so disastrous. He was, however, soon in such a state of intoxication, that it became necessary to carry him home. On the way, he vomited; and when he arrived at home, he was put to bed. In the course of the night, his parents became alarmed at his situation, and at five o'clock on Monday morning, I was called upon to see him. I found him in a high fever, the animal heat very great, the countenance much flushed, pulse 138, strong and full, and the heart acting most violently.—

He was in a state of the most complete stupor and insensibility, and had not spoken at all. As there was no power of swallowing, it was vain to think of any internal medicine. I had him taken out of bed and brought into a large, cool and airy room, where he was placed on a woman's knee, and the head kept completely erect; the limbs were wrapped in flannel; the entire head, neck, breast and upper part of the trunk were sponged with a mixture of cold water and vinegar; and this ablution was several times repeated till the animal heat was brought down towards the natural standard. This effect was brought about in the course of an hour. At the expiration of that time, the subsultus tendinum and violent startings, which had threatened general convulsions, had ceased; the action of the heart was much moderated, and the pulse had sunk to 108. I wished him, if possible, to swallow cold water; and a mug containing it was held to his lips; he did not swallow, but caught the vessel, containing the water, so firmly between his teeth, with a kind of convulsive effort, that when the vessel was withdrawn, a piece of it was firmly

retained between his teeth. However, in the course of another hour, he began to swallow cold water, which was highly grateful to him. Purgative enemata had been administered with some effect. About noon he made an attempt to speak a word or two, the tendency of which, as far as could be collected, seemed to be to complain of head-ach. Twelve leeches were now applied to the forehead and temples which bled copiously. In the course of the evening, he drank freely of whey and lemonade; about ten o'clock at night, he was attacked by a slight convulsion, which recurred several times during the night. At ten next morning, the stupor was very great; the pulse very irregular, but of a preternatural slowness, varying between seventy and eighty. The pupils were dilated. An additional number of leeches was applied and a very large blister over the entire scalp; three grains of calomel were directed every hour till free evacuations were procured, and to be assisted by the infusum sennæ, if necessary. During the day the convulsions increased in frequency and violence; and at ten o'clock in the evening,

that is about fifty-one hours after he had swallowed the whiskey, he expired.

I lament exceedingly that I had not an opportunity of examining the state of the brain. I should have considered such examination of the highest interest. What was the immediate cause of death? The whiskey did not kill by its first and direct operation on the nervous system. In that case, the effects would have been more immediate.—For the same reason, I cannot refer the cause of death to the sympathy existing between the stomach and the brain, or between the sanguiferous and nervous systems; that *sympathy* of which we have so often occasion to speak, and of which we cannot think without being reminded of the imperfection of our knowledge and the limitation of our views! I believe that in the bodies of those who have been killed by the narcotic poisons, the vessels of the brain are found gorged and distended with blood. On reviewing the present case, I think there is evidence of pressure on the brain, and I am inclined to believe that, short as the the time was, effusion had taken place. Assuredly, in many instances,

we observe the highest vascular action and a degree of serous effusion to go almost hand in hand, or at least, that the latter follows the former with a very rapid pace; and common phlegmon is often accompanied by œdema. Would the opening of the temporal artery or the jugular vein have been advisable?—Darwin says, that many persons in drunken apoplexy have died after copious venesection, and he supposes, in consequence of it.

NOTE.

The opinions here delivered, with respect both to the effects of blood-letting and the cause of death, derive a remarkable confirmation from an authority with which I have very lately become acquainted, and which I must consider as “*omni exceptione major*.” I allude to Bedingfield’s *Compendium of the Practice of the Bristol Infirmary*. The opportunities of studying the nature of this disease, and of ascertaining its causes by dissection, are, from peculiar circumstances, very frequent in that hospital. Upon the first arrival of the fleets from the West Indies, men are very frequently brought to hospital in a state of total insensibility, in fact in a state of apoplexy, which is induced by drinking rum to excess. This they procure by boring holes into the casks and sucking the liquor through straws, or small reeds. The author observes:—“Venesection in the early stages of the affection “seems to be especially indicated, as there is always a “considerable determination of blood to the brain. I

“ have, however, seen it employed to a great extent
“ without any manifest advantage: more frequently, *it has*
“ *proved injurious.*” In another place, when speaking of
the treatment of apoplexy, he says “ When apoplexy
“ arises from the reception of opium or vinous spirit into
“ the stomach, *I have almost invariably seen bleeding*
“ *prejudicial.*”

With respect to the morbid appearances discovered after death, he observes:—“ I have had several opportunities
“ afforded me of examining the brains and stomachs of
“ persons who died intoxicated. The appearances I have
“ met with have been uniformly the same. The vessels
“ of the brain were gorged with blood, and a quantity
“ of serum deposited in the lateral ventricles. In the
“ stomach, I have never been able to discover any de-
“ viations from a healthy state.”

The brain of a person destroyed by laudanum exhibited the same phenomena,

Mr. Bedingfield estimates the degree of danger by the irritability of the *Iris*. If this retain its contractile power, the patient will generally recover. If it remain dilated in a strong light, the hope of recovery is feeble.



CASES 6th, 7th, 8th, & 9th.

I shall take the liberty of subjoining the four following dissections of persons who died of typhus fever in our fever hospital. I think they may be introduced into this paper with some propriety, as the chief morbid appearances were found in the brain.

CASE I.

John Cluggish, aged about fifty, was brought into the hospital in August, 1817, labouring under the usual symptoms of typhus fever. This creature was of a dwarfish size, not exceeding four feet in height. His bones were distorted from his infancy. His frame was extremely robust and muscular, and his head uncommonly large. He had numerous petechiæ, and much head-ach and delirium. He remained in the hospital during nine weeks, his fever having proved tedious and severe; but for nearly six of those weeks, he was considered as a convalescent from fever. He continued, however, extremely dull, stupid and heavy, altogether deaf, incapable of being roused by any thing, and labouring under a high degree of debility. His appetite was keen, even to voracity. During the last six or seven weeks of his life, there was a very copious fetid feculent discharge from both

ears; and during the fever, a parotid swelling appeared on each side, which was brought forward by warm poultices. The abscess on each side broke and discharged purulent matter most copiously and for a considerable time. Ten days before his death, his feet and legs were highly œdematous, and he had great dyspnœa on the smallest exertion: and about this time a large quantity of pus was discharged from the lungs by coughing. He died very suddenly and unexpectedly.

DISSECTION.

On opening the cranium, a quantity of fluid, amounting to five or six ounces, and which seemed to be a mixture of pus and serum, was found on the outside of the dura mater. Between the hemispheres of the brain, on each side of the falx was a large quantity of thick purulent matter. In the ventricles, was a fluid exceeding four ounces, and which seemed to be a mixture of pus and serum. The whole substance of the brain was soft and pulpy, and seemed dissolved into a semi-

purulent mass, retaining very faint traces of organization.

In the thorax, the lungs appeared beset by numerous tubercles, many of which had suppurated. In the pericardium was an effusion of serum to the amount of eight ounces.—The apex of the heart was surrounded, to some extent, by a layer of coagulated lymph.

In the abdominal viscera, there was not any thing particularly deserving of notice.

CASE II.

Thomas Dornan, aged 24, a stout, active, muscular young man, was admitted into the hospital on the 14th day of October, 1817, labouring under the prevailing epidemic. As far as it was practicable to ascertain the fact, this seemed to be the 14th day of fever.—For the last two days he was considered as tending towards recovery; but died very suddenly on the 20th of the month, of what the nurses called *a fit*. But I could not learn that there was any convulsion. I saw the body opened four hours after death.

DISSECTION.

When the cranium was opened, the dura mater appeared to have very numerous and very large vessels running on it; and when this membrane was laid aside, the vessels of the pia mater, where it enters between the convolutions of the cerebrum, were unusually large and turgid, many of them appearing as thick as common writing quills. There were general appearances of increased vascularity through the entire substance of the brain. The membrane lining the ventricles appeared like a crimson net-work; and there was an effusion of a thin and clear fluid into the lateral ventricles, exceeding in quantity an ounce and a half. The thoracic viscera appeared sound; but there was an effusion into the pericardium of a colourless thin fluid to the amount of two ounces. The abdominal viscera were remarkably sound and of a healthy appearance.

CASE III.

Betty Rourke, aged thirty-three, married, and the mother of some children, died in the hospital on the 15th of November, being the 14th or 15th day of fever. She was covered with petechiæ. Her chief complaint for the last five days had been pain of the stomach and frequent vomiting.

DISSECTION.

The body was opened five hours after death, while it was still warm, so that the cavities, when opened, exhaled a sensible vapour.—The thoracic and abdominal viscera appeared remarkably sound; but the mucous coat of the stomach seemed highly vascular and inflamed; the small vessels appearing as if drawn by a pencil dipped in vermilion. The mucous coat of the duodenum exhibited a

similar appearance; and the external or peritoneal coat, in one part, of the breadth of a shilling, had a livid, purplish appearance, the vessels of the part being extremely turgid and much distended. On opening the cranium, the dura mater shewed obvious marks of increased vascularity; and when that membrane was divided, some serum flowed out, which appeared to have been situated between the membrane and the brain. The vessels of the brain itself appeared remarkably large and turgid, and the ventricles contained a quantity of clear serum to the amount of four ounces.

CASE IV.

John Devine, aged twenty-two. This stout, muscular, robust young man, was admitted into the hospital on the 12th December, 1817, that being the eighth or ninth day of the fever. He was covered with petechiæ, and died four days after admission. The history of his case, previous to his being brought to the hospital, I had no means of learning; but since he came in, his chief

complaint was of head-ach. The eyes were muddy and greatly suffused; and for thirty-six hours previous to his death, he was in a state of high delirium. About an hour before he died, he got out of bed, walked about the ward, and made some observations that appeared tolerably rational. On returning to his bed, he expired almost instantaneously, such an event being altogether unexpected by the attendants.

DISSECTION.

The body was opened ten hours after death by Mr. Miller. When the head was opened and the dura mater turned aside, the minute vessels running on the surface of the pia mater were more numerous than I had ever, in any instance, seen them before; and the larger vessels running between the convolutions of the brain, appeared remarkably tense, turgid and distended with blood of a purplish hue. On cutting down to the corpus callosum, we observed a purplish spot, nearly as broad as a tenpenny-piece, which suggested to me the idea of gangrene or rupture; but on the

strictest investigation, neither one nor the other was present: the veins however seemed distended to a degree just short of rupture. There was little or no effusion into the lateral ventricles. On removing the tentorium, the small arteries running on the surface of the cerebellum appeared to form a beautiful network, which suggested the idea of a painting made with a pencil charged with vermilion. The sinuses in general seemed as if stretched to the utmost degree of distention that could exist without rupture. On the whole, though we discovered neither rupture nor effusion, all the medical gentlemen present concurred in thinking that they had never seen a case exhibiting more decisive marks of high excitement and strong vascular action existing throughout the entire brain.

The other cavities exhibited sound viscera, and did not show any thing peculiarly deserving of notice.

OBSERVATIONS.

It will scarcely be imagined that it is my intention to draw any general conclusions, with respect either to the nature or treatment of fever, from premises so very limited: and indeed any discussion on these subjects would be here misplaced. But I do not imagine there can be any impropriety in one or two observations, strictly deducible from the appearances which these dissections exhibit.

There is no question connected with the treatment of fever, of more importance than that which regards the administration of wine and spirits; nor is there any part of the treatment in which, I apprehend, greater abuses have been committed. Surely if the physician should observe, in a case of fever, such symptoms as would indicate a state of the sensorium at all analogous to what these dissections discover, he would not think of

prescribing wine or alcohol. On the contrary, I should think that early depletion and an anti-phlogistic regimen would be the remedies best calculated to obviate the occurrence of such appearances. If I may be allowed to appeal to my own personal experience, it would tend to support the opinion here delivered. In many instances of the advanced stage of fever, I have seen profound coma set in; and this I think is uniformly accompanied with a pulse depressed, feeble and increasing in frequency. Under such circumstances, it has often been my fate to see wine or alcohol resorted to and freely administered, under the idea of supporting and maintaining the strength of the circulation; but *very rarely*, as far as my recollection serves me, with any beneficial result. The reason I conceive to be, that this depressed and weakened action of the heart and arteries is connected with a state of the sensorium for which wine is not a remedy. Let it, however, be remembered that it is the indiscriminate use of wine against which I enter my protest; and this is the error into which the inexperienced or routine practitioner is most apt to slide. I freely

acknowledge, however, that in some cases of fever, wine may be administered with advantage. But as this is a point on which it is impossible there can be too much precision or too much accuracy, I shall briefly state the circumstances under which, according to my views, wine is objectionable or pernicious; and secondly, those under which it may be admissible or expedient. It is likely to be pernicious,

1st. Where there is strong vascular action.

2d. Where the animal heat is above the natural standard, especially if accompanied with a dry burning skin.

3d. Where there is much affection of the sensorium, more especially much coma, with a pulse increasing in frequency.

4th. Where there are marks of local congestion in any organ.

5th. Where there is a dry, dirty, black or brownish tongue.

On the contrary, wine is likely to be expedient or useful where,

1st. There is a weak action of the vascular system, not depending on an oppressed state of the brain.

2d. Where the sensorium in the advanced stages of fever remains tolerably free.

3d. Where the animal heat is below, or not exceeding the natural standard, the skin and bowels being at the same time open.

4th. Where there is a remission of fever and the tongue is beginning to become clean and moist.

5th. When there is much exhaustion of the vis vitæ, either from the long continuance of fever, from the prevalence of previous disease, from a weakly constitution, or an advanced period of life :

—— Cum gelidus, tardante senecta,
Sanguis hebet, frigentque effœtæ in corpore vires.

22. Where the sensibility in the advanced stages of fever remains tolerably free.

23. Where the animal heat is below, or not exceeding the natural standard, the skin and bowels being at the same time open.

24. Where there is a remission of fever and the tongue is beginning to become clean

PHLETONITIS CHRONICA.

25. When there is much exhalation of the vis vitae, either from the long continuance

of fever, from the prevalence of previous diseases, or from the influence of the atmosphere

is a disease which appears to have been reserved for the observation of physicians of

modern times. It is a gradual and not a very unusual sequel of the acute species,

when the patient survives; that it cannot be considered as extremely rare; yet our great

nosologist, Dr. Cullen, though he has given an accurate definition of the acute species,

does not say one word of the chronic.

Lomius mentions it in a manner sufficiently explicit, and takes care to distinguish it from colic "colic tormentum."

Dr. Baillie has given an admirable account of the morbid appearances attendant on the

PERITONITIS CHRONICA.

THE chronic inflammation of the peritonæum is a disease which seems to have been reserved for the observation of physicians of modern times. As it is a natural and not very unusual sequela of the acute species, when the patient survives that, it cannot be considered as extremely rare: yet our great nosologist, Dr. Cullen, though he has given an accurate definition of the acute species, does not say one word of the chronic.

Lommius mentions it in a manner sufficiently explicit, and takes care to distinguish it from colic, "*coli tormentum*."

Dr. Baillie has given an admirable account of the morbid appearances attendant on pe-

ritonitis; but he seems to have had in his eye chiefly the acute species.

Doctor Monro, in his morbid anatomy of the intestines, distinctly notices the chronic inflammation of the peritoneal coat. He observes that it is slow and insidious in its progress—enumerates the symptoms by which it is characterized—and remarks that it is very apt, from some accidental circumstance, to be converted into the acute form of the disease.

Dr. Pemberton appears to me to have the merit, among the physicians of the present day, of having pointed out the great importance of this subject, and of having recommended it to the attention and observation of the profession. Indeed its importance cannot fail to be appreciated when it is considered how frequently it is the concomitant of visceral disease, and how often it forms a principal part of it.

I beg permission, through the remaining part of this paper, to designate by the term *factitious membrane* that production to which Doctor Baillie has given the name of the *membrane of adhesions*. It is well known

that this is generated by the effusion of coagulable lymph in consequence of inflammatory action. This effused lymph becomes an organized and living membrane by means of a continuity of vessels, which shoot into it from the parts on which it is deposited.

I trust I shall not be accused of any childish love of novelty, or passion for singularity, from wishing to substitute a new term in place of that used by Dr. Baillie. My motive is convenience, which induces me to wish to avoid a periphrastic form of language.—When this recurs frequently, it is awkward and offensive.

I shall now subjoin some account of two cases of this disease, which have lately come under my cognisance, and which appear to me to be pregnant with instruction.

CASE I.

A lady, aged thirty-nine years, lay-in of her third child on the 25th of August 1816. Her labour was uncommonly tedious and severe, and she was so much exhausted that her accoucheur expressed considerable appre-

hension of her surviving the delivery.— Within two or three hours, she was seized with severe pain over the entire abdomen, which became so tense and tender, that she could with difficulty bear the weight of the bed-clothes, much less any pressure of the hand. Though many medicines were administered, yet no alvine evacuation was procured till the eighth day after delivery. During this period, she had high fever, and felt an intensely burning heat internally, accompanied by excessive thirst and severe head-ach.— When at length she came to pass fæces, they were in prodigious quantity, highly fetid, dry and indurated, and the pain attending the evacuation so excessive, that she attributed the delirium which now supervened to that circumstance. At the end of another week, she found herself much relieved in consequence of a diarrhæa, as she thinks: but she was by no means free from abdominal pain and tenderness, and she did not consider her recovery as established till more than three months had elapsed. During this convalescence, her attention was perpetually drawn to a severe pain in the right iliac region, about

three inches lower than the umbilicus. This pain became permanent, and in the precise seat of it was perceived, after some time, the rudiment of that remarkable tumour which will be noticed presently. During this illness, she was distressed with dysury, which has continued to afflict her ever since. In January 1818, she became pregnant. When the uterus began to expand, she was tormented by pains in the pubic region, and in the inguina, and by general tenderness all over the abdomen; to which were added tenesmus and painful micturition. About the beginning of May, she had an attack of pyrexia, with pains in the loins and uterine hæmorrhage. Abortion followed, and was succeeded by such a degree of debility that her life was despaired of. Her recovery was very tedious and very imperfect; and since that time she has felt, almost constantly, lancinating pains through the abdomen of great acuteness and severity. Catamenia have been irregular and very profuse.

She has complained incessantly, for a great length of time, of acidity and flatulence, with nausea and a white tongue. She has

been obstinately costive and has had frequent sour vomitings.

On the evening of the 25th of September last, when walking in the garden, she was suddenly seized with rigors and a degree of debility amounting nearly to Syncope. The medical gentleman who was called on the occasion, found her in a state of alarming weakness, with a pulse scarcely perceptible and a hurried respiration. She complained of severe pain in the abdomen, and more especially in that part of it above alluded to, namely, in the right iliac region. At this part, a considerable tumour could be distinctly felt, which, though it imparted to the fingers that crepitus which confined flatus gives, was yet exquisitely sensible and impatient of pressure.

In the month of October, a second tumour was discoverable near the right groin. It appeared as large as an egg, and was exquisitely tender and painful.

As the situation of the patient appeared now to be full of danger, I was called into consultation. On examining the larger of the tumours, I conceived it to be nearly as

big as a small orange, and I imagined that I could encircle it within my grasp. I observed that the patient had that sallow and languid paleness, that cadaverous expression of countenance that is characteristic of visceral disease, and it was perfectly obvious that the extent to which disorganization had gone, rendered it insuperable, and that the administration of medicine, with a view to a cure, was frivolous. She continued to sink, had occasionally slight rigors, and was often bathed in colliquative sweats. Death put an end to this cheerless scene on the sixth of January 1819.

The inspection took place twenty-two hours after dissolution.

DISSECTION.

When the cavity of the abdomen was exposed, we were amazingly struck with the appearance of the omentum. We found it to be an exceedingly large, dense and massy viscus, in most places nearly half an inch thick. It stretched from the great curvature of the stomach to the arch of the colon, to

the entire extent of which it was connected by very firm adhesions. Thence it extended towards the pubes, where it had an extensive adhesion to the great mass of factitious membrane by which the uterus, bladder and rectum were connected or rather confounded together. Its exterior surface exhibited numerous vessels, and the branches of the Arteria Epiploica appeared more than double their accustomed size. It adhered to the concave surface of the liver, and in many places to the small intestines. Its interior surface exhibited the same appearance of numerous and enlarged vessels, and from thence there oozed a purulent secretion.—When the omentum was turned up, the intestines appeared unusually voluminous and felt extremely ponderous. The mesentery was much thickened, and on its surface there appeared a purulent secretion. Its glands had an appearance altogether different from that of health. They were of a blackish colour, small, shrunk and shrivelled. Their organic structure was partially obliterated, and we thought they seemed less numerous than usual. The convolutions of the intestines

were universally bound together by great masses of factitious membrane of a thickness, solidity and strength such as I had never seen before. In many parts, especially of the colon, the diameter of the intestinal tube was narrowed and contracted by bands of adhesive membrane. The indications of inflammatory action were universal through the whole cavity. The uterus, bladder and rectum were confounded, by the intervention of factitious membrane, into one great and shapeless mass. The two former organs retained the indications of the prevalence of former inflammation. The rectum was highly diseased, its coats thickened, and to the extent of more than four inches from the anus, it was in a state of sphacelus. There was an aperture through its coats into the abdominal cavity which would have admitted two fingers to pass through it. This perforation seemed of very recent origin, for no fæces were found in the cavity. This extremity of the gut was as lacerable as brown paper, and filled with a black, pitchy fæx. The liver was smaller than usual, dense in its structure, and adherent to the diaphragm by the whole

of its convex surface. The gall bladder was empty. The spleen and kidneys were sound in their internal structure, though with marks of superficial inflammation. The peritonæum lining the cavity exhibited, through its whole extent, the strongest possible marks of high inflammation. In many places, it was greatly thickened, and had lost its transparency, flexibility and elasticity. In others, there were deposits of coagulable lymph not yet converted into organized membrane.

The cavity of the abdomen contained more than two quarts of a thin, purulent fluid of a turbid appearance. We searched with the nicest scrutiny for an abscess, but could find none. We were therefore reduced to the necessity of supposing that pus had been secreted from the inflamed surfaces; and indeed, the appearance of the inner surface of the omentum and of the entire surface of the mesentery rendered that supposition sufficiently probable.

OBSERVATIONS.

This dissection suggests some reflections which appear to me of the utmost importance, both in a pathological and in a practical point of view.

1st. This is clearly an instance of the chronic affection of the peritonæum succeeding to the acute. The disease with which the lady was attacked at lying-in, was obviously puerperal fever, the leading circumstance of which is acute inflammation of the peritonæum. This, by bad management, was converted into the chronic species.

The great length of time which intervened between the origin and termination of the disease is very remarkable. The interim exceeds two years and four months.

2d. The great importance both of medicine and regimen may be clearly inferred from the history and event of the case.—

Both were utterly neglected till towards the termination, when it was impossible they could be effectual. A stimulant diet, with wine and other fermented drink, was used during the greater part of the period without the least reserve. Had the patient availed herself of medicinal and dietetic aids, from the beginning, and persevered with steadiness and judgment, her life would, I think, have been preserved. For this purpose, frequent depletion of the vessels, both local and general, frequent small doses of calomel, perhaps combined with opium, the constant use of saline laxatives, warm fomentations to the abdomen, the tepid bath and a milk diet, or at least a rigid antiphlogistic regimen, would have been requisite.

3d. The distressing symptoms under which the patient laboured, admit of an easy explanation from a contemplation of the morbid appearances, viz. the dysury, the tenesmus, the obstinate costiveness and the abortion.

The bladder was incapable, from the manner in which it was confounded and entangled with the uterus and rectum, of the necessary expansibility: neither could it contract in

the manner required for its easy and complete evacuation.

The tenesmus is to be explained on the same principle.

The obstinate costiveness, so difficult to be counteracted, is to be attributed to the extraordinary manner in which all the convolutions of the intestines were bound and cemented together by factitious membrane.—The effect of this was twofold, to destroy or impede the peristaltic motion and to diminish, in certain places, the caliber of the intestinal tube.

Abortion took place because the uterus was so blended and involved with the bladder and rectum, as to be incapable of the natural distention, and therefore threw off its contents.

Besides, these organs were all under the influence of morbid sympathies.

4th. The coincidence of the morbid phenomena with those stated by Dr. Baillie to attend inflammation of the peritonæum is very striking. He observes, "There is also a remarkable change in the omentum, which is frequently as thick as a person's hand." Again, "There is also a considerable quantity

“ of a brownish fluid in the cavity of the
“ abdomen resembling serum, which is mixt
“ with small shreds of coagulable lymph,
“ and sometimes with pus, giving it a turbid
“ appearance. In some instances, instead of
“ serum, a large quantity of pus is found.”
He particularly notices the large quantity of
factitious membrane, or as he calls it “the
membrane of adhesions” which such cases
present.

5th. But by far the most curious and
perhaps the most interesting circumstance
of this case yet remains, I mean the indication
of tumours existing in the tract of the intes-
tines. Dissection showed that the sensation
communicated to the fingers of the examiner
was fallacious and deceptive: for there was
nothing that could impart this perception
except the unusually large deposits of coagu-
lable lymph which had assumed the form of
factitious membrane. How then shall we
account for this deceptive indication which
misled both myself and the medical gentleman
in attendance so effectually, that we confidently
expected to find distinct tumours existing in
the general cavity, or perhaps concretions

formed within the intestinal tube, such as are described by Dr. Monro, in his *Morbid Anatomy*? The fallacy is, I apprehend, to be explained in the following manner:—When the fingers were pressed on the seat of these supposed tumours, there was a crepitation perceived. The tube of the intestines, distended by an elastic and compressible gas, shrunk under the pressure; while the factitious membrane, interposed in solid masses between their convolutions, being inelastic and incompressible, did not recede, and the fingers descending or sinking on each side of it, received the same impression which a tumour or ball would have communicated. Perhaps the interposition of the omentum, so unusually thickened, might add to the apparent size.

CASE II.

The second case of the chronic inflammation of the peritonæum which I propose to detail, was one in which it was combined with *tabes mesenterica*, a complication, I believe, not very unusual. The subject of it was a young lady, aged nine years. This patient I did

not see till within a month of her death, though her disease had commenced seventeen or eighteen months before. Hence it is obvious that it will not be in my power to give any accurate history of the disease in its early stage, a circumstance which I regret, as I consider the history of the symptoms, at their commencement, as of the greatest importance. I learned, however, that the first symptoms of indisposition were great languor and listlessness, great disinclination to exertion of every kind and a most unusual sensibility to cold. This was so remarkable that when urged to walk out in clear cold weather, she was apt to return crying with violent pain in the abdomen. To this succeeded great fretfulness of temper, and an inability to draw up the trunk of the body perfectly straight without feeling pain in the abdomen. On the contrary, it was observed that she had an irresistible inclination to lean forward so as to relax the parietes of the abdomen. To this propensity she yielded even in the sitting posture; and when in bed, she always lay with her knees drawn up towards the belly. It is to be observed

that when a certain degree of emaciation was induced, an unfortunate plan was adopted of endeavouring to support the child's flesh and strength by bark, wine and a stimulant regimen of animal food; and about six or seven months previous to her death, she was carried to the sea side, where she was frequently immersed in the cold bath; a ruinous practice!

When I first visited this child, I found her labouring under an extreme degree of emaciation and a corresponding degree of debility. She was confined entirely to bed. The pulse fluctuated between one hundred and one hundred and twenty. The tongue was furred and the appetite, which had been good, now failed. The heat of the body was moderate. The bowels were obstinately costive, and it required large doses of powerful cathartics, as well as active enemata, to excite their function. The abdomen was very tense and tumid, and utterly impatient of the slightest degree of pressure. In two or three particular spots might be felt a circumscribed induration, accompanied with the most exquisite sensibility, which appeared to me to indicate the

existence of some tumour underneath, or of some visceral obstruction. There occurred frequently through the day violent paroxysms of very acute pain in the abdomen, the duration of which was from three to five minutes and which obliged the poor child to scream out most piteously. She could not be induced readily to take any medicine, and indeed I believe that was of very little consequence.

After having been reduced to a degree of emaciation and weakness, which I have never seen surpassed, and suffering dreadful paroxysms of very acute pain, she expired about one month after I had seen her. The inspection took place nine hours after death.

DISSECTION.

On making an incision in the direction of the linea alba in order to expose the contents of the abdomen, it appeared that the integuments, cellular tissue, muscles and peritonæum, taken together, did not much exceed, in point of thickness, a crown-piece. When the inte-

guments were turned back, the first remarkable circumstance was the total absence of any thing like omentum.

The peritonæum lining the cavity was universally in a state of the highest inflammation. In many places it was considerably thickened and had lost its transparency and flexibility. It was connected, at the origin of the great arch of the colon, with the peritoneal coat of that intestine by membranous adhesions so dense and firm, that one of the gentlemen dissecting observed that the feel, under the knife, reminded him more of cartilage than of a serous membrane. This spot corresponded to the seat of the apparent tumour externally indicated, and had been, during life, the seat of exquisite pain, greatly aggravated by the slightest pressure.

The convolutions of the intestines adhered to each other in numberless places, the connexion being formed by portions of factitious membrane of great density and firmness.—In several places sacs were observed filled with pus, the parietes of which were formed by this factitious membrane.

The liver appeared thin, as if it had been

squeezed up against the diaphragm by the other abdominal contents. Its substance, when cut into, appeared dense and firm, and of the colour of bloody coagulum. It adhered by its whole convex surface to the diaphragm. Its concave surface was connected with the colon by strong and extensive adhesions.

In the mesentery were three distinct abscesses full of pus. The glands of this viscus were universally in a state of disease. When cut into, they were, I believe without any exception, filled with a cheesy or curdy matter.

On the external surface of the intestines both great and small, were numerous bodies of a glandular shape and appearance, whose contents exactly resembled soap. They seemed, as it were, to ride on the surface of the intestine, not to be buried in its substance, so that they could readily be dissected out without destroying its coats. In fact they appeared as if connected with the peritoneal coat by loose cellular substance.

The other cavities we had not leisure to examine.

OBSERVATIONS.

1st. A review of this case suggests the same reflexion that arose in the former instance, namely, the ruinous effects of a plan of treatment altogether unsuitable to the nature of the disease. This, like the former case, would have required a regimen strictly antiphlogistic. In both instances, a contrary course was pursued, and the consequences were such as might reasonably be anticipated.

Dr. Pemberton's instructions on this head appear to me excellent. He would forbid all "animal food or broths, and all fermented
" liquors, and enforce the absolute necessity
" of rigidly adhering to a milk and vegetable
" diet: and above all, of taking away blood
" once or twice in the week, to the quantity
" of six ounces each time." As long as the effects of the disease are rather local than constitutional, the blood should be taken

by leeches or by the scarificator. Blistering also, if perseveringly repeated, will be productive of much advantage.

A combination of calomel with antimonial powder, and sometimes with opium, will, I think, be found an admirable remedy.

2d. This case affords an illustration of a principle which was developed in the preceding one, namely, that there may exist externally an indication of tumour or of visceral obstruction, which dissection will not verify. There were, in the present instance, certain parts of the abdomen which were extremely tense, hard and impatient of the slightest pressure. But on dissection, the only morbid appearance that could account for this external indication was the great depositions of lymph which had taken on the membranous structure.

3d. It has been supposed that a connexion exists between the chronic peritonitis and a diseased state of the mesenteric glands. I am satisfied that this opinion is perfectly correct, as far as it goes: but here there is ground for some remark. Dr. Pemberton considers the enlargement of the mesenteric

glands which accompanies peritonitis chronica as altogether different from the scrophulous affection of those glands. He has never seen them suppurated nor containing a cheesy matter. In the case which I have related, these glands were universally filled with a cheesy or steatomatous matter, and had every characteristic of scrophulous glands. On the other hand, the first of the two cases related had certainly no connexion whatever with scrophula. The actual fact I take to be that the disease of the glands of the mesentery which is observed to accompany peritonitis chronica, is sometimes of a scrophulous nature, and sometimes it is not so. When it is connected with scrophula, I am disposed to think that the glandular disease is the first in the series of morbid actions, and that the affection of the peritoneal membrane is secondary or consecutive. In these cases, the emaciation is extreme and the omentum altogether wasted. When on the other hand, the first link in the chain of disease is membranous inflammation, unconnected with scrophula, the glands of the mesentery are irritated to diseased action from sympathy with the

membrane in which they are seated. In such cases, the emaciation is not so conspicuous, and the omentum is, as we have seen, astonishingly enlarged.

4th. Two reflexions here present themselves of a nature so general, that they cannot strictly be said to arise out of the contemplation of this individual case; but they are applicable to it. The first is one of the truth and importance of which the experience of the observant physician will furnish numberless confirmations. He will meet with many cases of which the most prominent feature will be an increase of vascular action. It will then be incumbent on him to bear in mind that diseased action, long continued, is likely to terminate in diseased structure: and in many cases, the most rational object he can propose to himself will be to obviate or prevent the establishment of organic disease; for if that be once confirmed, the remainder of life will be a scene of discomfort, of suffering and of gloomy apprehension.

5th. The other general reflexion is one which parents and relatives can render available rather than physicians. It respects the

regulation of one of the most powerful principles of human nature, that is, natural affection. Such is on many occasions the force of that overbearing instinct, that $\Sigma\tau\omicron\rho\phi\eta$ which nature has implanted in the breasts of all living creatures towards their offspring, that parents look rather to the gratification of their children than to their solid and permanent advantage. They too often view their interests through the refractive and distorting medium of feeling. The consequences are such as I believe every physician must at times have found embarrassing. The best medical advice becomes nugatory and the sacrifice of health inevitable.

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The case which I am about to submit appears to be one of the most singular, and was to me one of the most interesting I have met with. It is singular on account of the remarkable change of character and symptoms which marked its progress; and it derived a high interest from the peculiar subject of it. This was a young lady, aged twelve years, who gave indications of unusual talents, evinced perceptions the most

OTITIS.

CASE OF OTITIS,

WITH A SINGULAR TERMINATION.

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lively and acute, and exhibited the early dawns of powers of taste and intellect of the highest order.

On the morning of the 23d December, this young lady was roused from her sleep by a severe pain in the left ear, which was immediately succeeded by vomiting. It appears that for some months past she had been liable to occasional attacks of pain in this ear, and had sometimes complained of vertigo and deafness. I visited her for the first time on the 27th of December, when I found that she had had some smart rigors. She was hot and feverish, the pulse quick and the face flushed. On inquiry, I was informed that there had been some appearance, though very trifling, of a purulent discharge from the ear; but when I examined, I could not discover any. The teguments all round the ear, though neither discoloured nor puffed, were extremely tender and painful on pressure. The os malæ and parts about the zygoma were particularly sensible to the slightest impression of the finger. Even the cartilage of the ear, particularly the helix, was impatient of the most gentle handling.

There was a severe pain felt at the occiput. The degree of debility present seemed great when one considered the very recent origin of the disease. She was totally incapable of getting out of bed, and complained that light and noise were extremely offensive to her.

The appetite was annihilated from the beginning.

About two years ago, this young lady had the measles very severely. During her convalescence, a very extraordinary and very sudden change took place in the colour of her hair. This had been of a beautiful light brown, characterized by all the softness and succulence of youth: but in the course of a few days, it changed to a silvery whiteness with all the harshness and aridity of old age. This character it still retains; but it does not appear that any other permanent impression was left on the constitution.— Though she had lost the “*decora cæsaries*,” youth and renovated health had restored every thing else;

————— *lumenque juventæ*

Purpureum, et lætos oculis afflârat honores.

Previous to my visit, leeches had been applied round the ear, and a blister to the nape of the neck. She had been purged and taken calomel and antimonial powder conjoined. In addition to these, I directed that the ear should be poulticed, stuped and syringed, and the pulp of roasted onion introduced into the meatus externus every eight hours.

Mittatur sanguis e brachio statim ad uncias octo.

Adhibeantur hirudines octo circa aurem et emplastrum cantharidis pone eam.

Perstet uti pulveribus e calomelane et pulvere antimoniali.

January 1st.—The means advised to promote suppuration in the internal ear have been diligently carried into effect; but there has been scarcely any appearance of pus. The teguments around the ear are still extremely tender. There have been frequent rigors followed by profuse sweating.

To-day there appears to be a paralytic affection of some of the muscles of the face: the mouth is at times observed to be drawn towards the right side; the left palpebra is

incapable of closing so as to cover the globe of the eye completely. Vision of the left eye imperfect. Pupils very large.

The calomel has shown its effects in the mouth.

4th. The pain and tenderness of the teguments surrounding the ear have abated; yet the rigors have recurred frequently and severely. The debility is very great, and the thirst urgent. Pulse generally one hundred and twenty.

It seems to me unquestionable that a suppurative process is going on somewhere; yet the appearance of purulent discharge from the ear has been next to nothing.

I should be inclined to suspect a translation of disease to the dura mater, but that the symptoms denoting an affection of that membrane are not strongly marked. There is no violent headach, no delirium, no coma; and the aversion to light is not so great as it was a week ago. Paralysis of the muscles of the face as before.

The rigors have continued. There has been no purulent discharge from the ear.

She does not complain of much pain in the ear or the surrounding parts.

This day, *for the first time*, the respiration appears a little hurried, and she has had some cough.

The powers of life seem to be sinking.

11th. Respiration more disturbed and cough more frequent and severe. Complains of acute pain in the chest, which she says cuts her, when she attempts to move, so that she cannot raise herself in bed or attempt to lie down again, unless she is assisted, and that in the most cautious manner.

She observes that she is afraid to take in her breath, and that she is obliged to check the effort of inspiration before it is completed. This is on account of the acute pain which inspiration excites. This pain goes all round the chest and towards the back. Rigors continue, with profuse sweating and intense thirst. No mention of pain in the ear.

13th. The pain of the chest has been excruciating, and the paroxysms of coughing distressing beyond measure. She uses her utmost efforts to restrain or keep down the cough. No expectoration. Great dyspnoea.

Rigors continue. Strength declines most rapidly.

15th. Pain of the chest as bad as possible and cough dreadful: observes that she feels something cracking in her chest when she breathes. Dyspnœa so great that she can hardly get into the recumbent posture at all, but is supported chiefly in the erect one.

16th. Every symptom worse. Pulse one hundred and twenty-eight. Respiration forty.

17th. Pulse one hundred and thirty-six.—Respiration sixty. The approach of death is obvious.

18th. Died this day at twelve o'clock.

DISSECTION.

This took place twenty-four hours after death.

THE HEAD EXTERNALLY.

When a probe was passed through the membrana tympani, it came out entirely covered with very thick pus, which was also

very fetid. When the meatus internus was afterwards exposed to view, it appeared to be completely filled with the same kind of pus. All the parts of the internal ear, and the membrane lining that cavity were involved in one common ruin in consequence of suppuration.

The teguments surrounding the ear, when dissected from their adhesion to the cranium, did not exhibit any decisive indication either of inflammation or suppuration. At one place indeed, immediately under the zygomatic process, the teguments seemed rather detached from the cranium, and their interior surface was rather blackish. But this appearance did not, in breadth, much exceed a herring scale. An appearance somewhat similar was observed near the foramen magnum, at the contiguity of the occipital bone to the atlas.

THE HEAD INTERNALLY.

Within the cranium, every thing appeared perfectly sound and healthy, both the brain and its envelopes. The most attentive scrutiny could not discover any trace of organic

disease or of effusion. The brain indeed appeared florid and vascular; but I do not think it was more so than might be expected in so young a subject.

THE THORAX.

The indications of high inflammation were universal through the whole of this cavity. The pleura pulmonalis and costalis appeared to have partaken equally of that action.—There was a considerable effusion of fluid into both the cavities; and there were very numerous filaments of coagulable lymph floating in the effused serum and passing, like coarse threads, from the pleura costalis to the pulmonalis and adhering to both. Many of these filaments were an inch long. In one part of the lining pleura, near the spine on the left side, there was a very remarkable deposition of coagulable lymph. It lay on the surface of the membrane in lumps as large as peas. These were scarcely adherent to the membrane; for they might easily be taken up between the fingers. Some of them even stuck to the sponge which

was used to take up the effused serum. The heart appeared healthy.

Both lobes of the lungs were full of very small abscesses, none of which were larger than a pea. When cut into, there was a discharge of a thin ichorous, bloody pus, which struck me as being of very recent formation. There was no appearance of tubercles, nor of any thing that indicated any disease of the lungs of *long standing*. The bronchiæ contained a very thin purulent secretion.

THE ABDOMEN.

In this cavity, all the viscera, without exception, appeared remarkably sound and healthy.

OBSERVATIONS.

1st. The case now detailed appears to me extremely interesting inasmuch as it suggests views of the succession or catenation of diseased actions, which are either not common or perhaps not much attended

to. I considered it originally as a case of simple and uncombined *Otitis*; and that opinion I have not as yet seen any reason to change. The disease commenced on the 23d of December, and ran a course of twenty-seven days. During twenty-three of those days I visited the patient daily, and I can safely affirm that I watched its progress with attention, not without a considerable mixture of anxiety and interest. There was from the beginning smart fever and great debility. The frequent rigors I considered as indicative of suppuration in the internal ear, and perhaps in the cellular texture of the surrounding teguments. When the local pain abated without any unequivocal discharge of pus, and yet the rigors continued to recur with as much frequency and severity as ever, I strongly apprehended a translation of the morbid action to the membranes of the brain; and this apprehension seemed to derive some colour of probability from the paralytic state of the muscles of the face. This idea retained possession of my mind till I observed unequivocal marks of inflammatory action prevailing in a very

different viscus. On the 10th of January, that is nineteen days after the commencement of the disease, pulmonic symptoms *for the first time* presented themselves. Previous to that day, I can confidently affirm that there was not the faintest indication of any pulmonary affection, neither pain, cough nor impeded respiration. The extreme violence and severity with which these symptoms now set in shew that the *new disease assumed its character all at once*. How then shall we account for its origin at this particular period? Shall we say that it was an instance of the translation of disease? Or that the local disease stirred up such a constitutional irritation, such an universal disturbance, as, after having existed for a length of time, showed its influence on an organ which originally had borne no share of disease? This is the view I am disposed to take of the subject; and I conceive that the animal œconomy supplies extensive analogies from which it derives countenance and support. For instance:—the hydrocephalus internus seems frequently to be a secondary disease, or consecutive upon local irritation. Thus

worms in the alimentary canal, dentition, disease of the mesenteric glands or of the liver seem, in many instances, to be the sources from which hydrocephalus is derived. Nay, sometimes it would appear to be excited by the irritation of a surgical operation.* It is on a similar principle that I have observed a painful and inflammatory affection of the scalp to originate from long continued derangement of the digestive organs and to be effectually removed by restoring the healthy function of those organs. If then local irritation be capable of exciting such a diseased action in the brain as will terminate in serous effusion, can we not readily conceive that the same cause may excite such an inflammatory action in the lungs as shall lead to serous effusion or to suppuration, or to both conjoined?

2d. There are certain symptoms mentioned in the history which seem to require some explanation. Their connexion with the leading circumstance of the disease, or the nature of the relation which they bore to

* See Bedingfield's Compendium of the Practice of the Bristol Infirmary.

it, is not perfectly obvious, and to assign the cause of them requires some reflexion. Such are the pain in the teguments surrounding the ear, in the os malæ, at the zygoma and at the occiput, the paralytic affection of the left palpebra, the imperfect vision of the left eye, and the occasional traction of the angle of the mouth on the right side.

I beg leave, in the first instance, to premise two general principles:—first, that when any nerve is injured in its structure, such lesion of structure will lead necessarily to a lesion of function:—and secondly, that nervous pain, numbness and paralysis seem to be only different modifications of a lesion of the nervous function.

When we consider that all the parts of the internal ear were destroyed and melted down by suppuration, it will be obvious that both branches of the seventh pair of nerves, the *portio mollis* and the *portio dura*, were involved in the common ruin. It will be equally obvious that the function of the *portio dura* in all those parts to which it is distributed after its exit from the aqueduct of Fallopius, must have been injured or par-

tially destroyed. It is then only necessary to consider the ultimate distribution of this nerve on the muscles of the face, the cheek, the orbicularis palpebrarum, &c. to enable us to understand the injured function of those parts. Even the pain felt at the occiput probably originated from the occipital branch of this nerve.

The frequent communications of the branches of the fifth pair of nerves with those of the portio dura may contribute to throw light on this point. The communicating branches would probably participate in that lesion of function under which the branches of the portio dura suffered.

tionally destroyed. It is then only necessary to consider the ultimate distribution of this nerve on the muscles of the face, the cheek, the orbicularis palpebrarum, &c. to enable us to understand the injured function of those parts. I think the pain felt at the occiput probably originated from the occipital branch of this nerve.

The frequent communications of the branches of the fifth pair of nerves with those of the fourth pair is a disease at which we have to be on our guard. The communicating branches on this point would probably participate in that lesion of function under which the branches of the fourth pair have been seen. It is this which has been described as taken notice of by the physician who has taken notice of the

weakness of the eye.
That the observed and sagacious Sydenham would have put on his circumstance under the head appears altogether extraordinary. In his account of the epidemic constitution from 1679 to 1680 he mentions the Diabetes as sometimes a sequel of intermittents in some persons; and we again find some account of the disease in his process of inquiry; but is neither place is there any allusion to the weakness of the eye.

DIABETES MELLITUS.

THE Diabetes is a disease of which we find mention in Aretæus, Galen and other early writers; but of that species of it which has been denominated *Mellitus* they do not seem to have been aware. Dr. Willis is the first physician who has taken notice of the sweetness of the urine.

That the observant and sagacious Sydenham should have passed by this circumstance unnoticed appears altogether extraordinary. In his account of the epidemic constitution from 1675 to 1680 he mentions the Diabetes as sometimes a sequela of intermittents in aged persons: and we again find some account of the disease in his *processus integri*; but in neither place is there any allusion to the sweetness of the urine.

What relation the two species of the disease, the *insipidus* and the *mellitus*, bear to each other is a point on which there is, as yet, a deficiency of observation. Dr. Bostock, whose authority on this subject must rank very high, considers them as convertible or alternating.

There is no disease whatever that has afforded a more notable example of the tendency of the human mind to embrace hypothesis: a tendency which we have so often occasion to observe and which we can so rarely commend. In this instance, as in all others of a similar kind, where there is an attempt to captivate the imagination by splendid theory rather than to impress the understanding by legitimate induction, the authority of opinions resting on such a basis is utterly to be rejected.

Doctor Meade, in his essay on the Viper, delivers his opinion that the Diabetes has its seat in the liver, and that it is occasioned by a vitiated mixture of the bile. He says that the natural proportion of salt in the bile, by which its oily and aqueous parts are incorporated, becomes insufficient to pre-

serve the mixture:—that the thinner parts run off by the kidneys:—that the thicker oily particles are left in a state of coagulation in the smaller tubes of the liver, and are there formed into hard fatty substances:—and he alleges that dissections prove this fact, for that he has always found a steatomatous collection in the livers of diabetic patients. The sweetness of the urine, he thinks, is bilious; for the water of the bile, separated from its salt, is sweet.

I am at a loss to know where we could find a more remarkable instance of gratuitous assumption and of wild hypothesis, equally vague and unsatisfactory. Any morbid appearance which Meade may have observed in the liver was undoubtedly accidental; for modern dissectors, whose accuracy is more to be relied on, have not met with any appearance of the kind. Dr. Cullen says that in twenty instances of Diabetes which he had seen, there was no evident affection of the liver.

Dr. Cullen, whose very conjectures are the offspring of a sagacious mind, supposed that the cause of Diabetes was “a fault in

“ the assimilation of the fluids.” This conjecture he communicated to his friend and correspondent, Dr. Dobson. Dobson subsequently endeavoured to follow up this opinion and to shew that the chyle circulated in the vessels in an unchanged state, whence it was strained off by the kidneys in the form of sweet urine.

On this opinion it is sufficient to observe that the serum of the blood of a Diabetic patient is not sweeter than ordinary serum : and indeed Dr. Henry, of Manchester, has shewn, not merely on his own authority, but on that of Dr. Wollaston, and of the French chemists Nicolas and Gueudeville, that saccharine matter does not exist ready formed in the serum of Diabetic blood. Let us, however, do justice to Dr. Dobson. He seems to have been the first person who investigated the circumstances on which the sweetness of the urine immediately depends. He evaporated the urine and obtained from two quarts of it more than four ounces of a cake which had a granulated appearance and in smell and taste resembled brown sugar. He farther ascertained that Diabetic urine was

susceptible of the vinous, acetous and putrid fermentations.

The late ingenious Dr. Darwin promulgated an opinion concerning this disease which may be taken as an example of the extraordinary lengths to which men of talents will suffer themselves to be carried by an unregulated passion for novelty, or by what I would denominate, if I might be allowed the expression, the lust of ingenuity. He assumed that Diabetes was produced by a retrograde motion of the absorbent vessels in consequence of which, chyle was carried from the lacteals into the lymphatics of the kidneys or bladder, and thus made its appearance in the urine.

With respect to this opinion, it may be sufficient to observe first, that it proceeds upon the idea of chyle in the urine giving origin to the saccharine matter. But the extract of Diabetic urine is by no means chyle, nor does it resemble it in its sensible or chemical qualities.

Secondly, as to the anatomical fact, the opinion of Dr. Baillie would seem to be decisive. He observes, "that no anastomosis

“ has been demonstrated in the human
“ body between the lacteal vessels and the
“ lymphatics of the kidneys or bladder, and
“ that it is not likely such an anastomosis
“ between them takes place;” and again,
“ that no decisive proof has been given of
“ the retrograde action of the absorbent
“ vessels, and that this idea is contrary to
“ the contrivances in their structure, and to
“ their obvious mode of action.”

Two respectable modern physicians, our contemporaries, Doctors Rollo and Watt, have published important treatises on this subject. The former considered the proximate cause of the disease to be a morbidly increased action of the stomach with a vitiation of the gastric fluid, which caused an evolution of saccharine matter.

I apprehend that subsequent experience has not tended to establish this opinion; for cases have occurred which were not attended with the voracious appetite.

An important practical point however seems to have been established in consequence of Doctor Rollo's researches on this subject,

namely, the expediency and utility of a diet consisting exclusively of animal matter.

Doctor Watt has not, I think, brought forward any pathological views of this disease that can be considered as new. But his work has been the means of introducing the practice of blood-letting to an unprecedented extent.

After having seen the result of the speculations of so many enlightened and ingenious men, it will scarcely be expected that I should attempt to explain the pathology of this disease. I shall content myself with recounting some leading circumstances attendant on two cases of it which I have had an opportunity of witnessing, and which appear to me to be important and interesting with a view both to pathology and practice.



CASE I.

A person of great worth and respectability placed himself under my care on the 9th of February, 1815. He was aged thirty-five, tall and slender, and his habits of life had been in the highest degree temperate and

regular. He had been much exposed to alternations of heat and cold in the course of his business, the superintendence of a hat-factory. He had asked the advice of a very eminent physician on Christmas-day, who ascertained that his voice was weak, his flesh wasted, limbs feeble, tongue white, skin very dry but not scaly, thirst very distressing, quantity of urine greatly increased. Pulse one hundred.

February 11th.—No particular investigation of the nature and qualities of the urine having been instituted up till the present date, I considered it necessary to subject that matter to the test of experiment. I found that the quantity made in twenty-four hours exceeded sixteen pints. Three pints of it being slowly evaporated in an earthen pipkin yielded more than four ounces of a residuum, having the appearance of molasses, with a strong smell and taste of honey.*

12th.—Tongue white; skin dry but not scaly. Thirst very urgent. Emaciation, debility and listlessness very considerable.—Appetite diminished.

* Note G.

It is necessary particularly to observe, that he has been using for a great length of time and in great profusion oranges, lemons and grapes. He has also been in the habit of drinking bottled porter at dinner. These must, I conceive, have been highly pernicious. Their use is of course now forbidden, and he is desired to confine himself as nearly as possible to an animal diet. He is to use the tepid salt bath at the temperature of 95° and to take exercise on horseback as often as the weather will permit. His common drink is to be plain water or the carbonated lime-water. The bowels to be kept free by pills of aloes, myrrh, antimonial powder, and soap.

16th.—Thirst diminished. Urine for the last two days has not exceeded eight pints. Some tendency to moisture on the skin.

Twelve ounces of blood were taken from the arm yesterday, the serum of which had streaks of a milky appearance on its surface. The serum, both now and in all subsequent trials, was absolutely free from any sensible sweetness, distinguishable by the palate.—

When heat was applied to it, coagulation took place exactly in the usual manner.

I have had the patient weighed to-day with the greatest accuracy. His weight is nine stone seven pounds.

Mittr. sanguis e brachio ad unc. xii.

Feels himself stronger and more comfortable in consequence, as he thinks, of the blood-letting. Urine for the last six days varying from eight to ten pints. Thirst less urgent. He is to take twice a day a pill consisting of one grain of hippo, one of opium, and half a grain of capsicum.

24th.—Blood drawn to the amount of twelve ounces. Serum milky.

March 3d.—Considerable thirst. Some slight perspiration at night since he used the opium and hippo. Has had occasionally head-ach, flatulence and acidity of stomach, with uneasiness of the bowels and tenesmus.—Appetite moderate. Much languor which he thought increased after being purged by calomel. Urine ten pints. Diabetic sugar $4\frac{1}{2}$ ounces.

The pills of hippo and opium to be omitted,

and in their place he is to take a grain and a half of opium night and morning.

Mittr. sanguis ad unc. xii.

8th.—Strength improved. Thirst diminished. Urine not above six pounds and less saccharine as to smell and taste.

13th.—For the last two days, has felt much uneasiness in the stomach and bowels, with flatulence and loss of appetite. Thirst increased; strength diminished. Urine ten pints. Diabetic sugar four ounces.

Sumat Opii colati gr. 1 quater in die.

24th.—Strength improved. Urine six pints; Diabetic sugar four ounces and three drachms, which though it retains the smell and appearance of dark coloured honey is less perceptibly sweet to the taste than at first.

Being accurately weighed to-day, he appears to have gained $3\frac{1}{2}$ pounds since February 16th.

For some days past, he has acidulated his drink with the sulphuric acid to the extent of sixty drops daily. This he has found highly grateful.

Sumat Opii colati gr. iss quater indies.

Mittatur sanguis ad unc. xii.

April 1st.—Considerable drowsiness from the opium, with an occasional but transient sense of fulness in the head.

Urine for the last ten days has been very free from sweetness discoverable by the palate. The average quantity in twenty-four hours has been six pints.

Sumat Opii colati gr. ii quater indies.

10th.—For the last nine days, he has used eight grains of opium daily without inconvenience: has felt occasionally a slight pain in the region of the bladder and some degree of itching at the orifice of the urethra on passing urine. The urine continues free from sensible sweetness and has not for the last two days exceeded four pints daily.

Being weighed to-day, he has gained six pounds since February 16th.

16th.—Strength improves. Opium reduced to six grains daily. Urine from four to five pints, not sweet to the organ of taste, and depositing on standing a heavy reddish sediment which adheres to the vessel. Perspires freely at night and complains of a general sense of itching over the skin. Dejections of a light or milky colour. He is desired to

use pills composed of aloes, myrrh, pil. hydrarg. and antimonial powder.

22d.—Urine does not exceed four pints.—
He has gained in weight fully 7lb.

Mittatur sanguis ad unc. xii.

28th.—Daily quantity of opium six grains.
Diabetic sugar $3\frac{1}{2}$ ounces.

May 4th.—Urine four pints. Diabetic sugar
3oz.

7th.—Mitte sanguinem ad unc. xii.

18th.—Four days ago, had a severe attack of sickness, vomiting and diarrhæa, since which the appetite has been impaired. Being weighed to-day, he appears to have lost 2lb.

22d.—Diabetic sugar to-day only two ounces, in which the melleous smell is much fainter than formerly, neither is its saccharine quality so strong on the palate.

Opium continued to six grains daily.

July 10th.—He has now been absent on a visit for six weeks; during which he used the opium regularly to the extent of six grains daily; and he has given up altogether the use of bottled porter, from which it had been difficult completely to restrain him.—
His drink has been plain water and carbo-

nated lime-water. During his absence, he was once bled to the amount of sixteen ounces.

He appears improved in health and strength. Being weighed to-day, he has gained 4lb. since the 18th of May, or 9lb. since the 16th of February.

Urine 4lb. Diabetic sugar one ounce and six drachms. It has a completely granular or crystallized appearance.

During his absence, after a severe attack of pain in the bowels, he passed a living worm of the Lumbricus kind.

About this time the patient returned to his residence near Dublin. His life was protracted for one year and seven months. During this period, he was under the care of a young medical friend of mine, whose assistance I was so fortunate as to have while the patient remained in this neighbourhood, and whose anxiety and diligence in the pursuit of professional knowledge I cannot too highly commend. The friend to whom I allude is Dr. Mollan, now of Abbey-street, Dublin. To his kindness I am indebted for the following account of the patient

during the remainder of his life, and also of the appearances on dissection.

Dublin, Dec. 20, 1817.

Up to the beginning of January last, no material change had occurred in the symptoms. For the three months preceding, the health had been, on the whole, more steady than since the commencement of the disease. About this period, however, a considerable increase in the quantity of urine occurred, accompanied with pain of the loins, disturbed sleep and a smart degree of fever. From these symptoms he experienced considerable relief by blood-letting. A few days after, he was cupped in the region of the kidneys and had a pitch plaster applied, but without manifest advantage. He now complained of a slight cough, and of occasional pain in the chest; but it was so trifling as not to attract much attention. Having, however, been exposed to cold, coming out of a warm bath, the pain and cough were suddenly aggravated, and on the last day of January, I found him labouring under acute pain of the left side of the thorax, shooting to the loins, and accompanied with hot skin, quick and

hard pulse, and in short, all the symptoms of Pleuritis. On this and the two following days, he was bled and had a blister to the chest. By these means, the symptoms seemed to be removed, and for two days he appeared to be gaining ground, though in a state of extreme debility. On the 5th of February, however, the pain of the chest had again become acute and the pulse hard. He was again bled. Next day, the affection of the chest was lessened; but he complained of a violent pain in the loins and the debility was increasing. A blister was applied to the loins. On the 7th, he appeared to be rapidly sinking, which he continued to do during the day; and at midnight he expired.

The body was opened thirty six hours after death, and the following were the appearances observed on dissection.

IN THE ABDOMEN.

Veins of the omentum more turgid than usual. Stomach distended with air and liquid food. External coat of a natural appearance. Mucous coat in some part of the pyloric orifice of a bright red colour to the extent

of several inches, as if arterial blood were effused into its texture. This coat broke down easily under the finger. In the Jejunum, the mucous coat more vascular than natural, and presenting in different parts the same appearances as in the stomach. In the intestines both large and small, the veins were redder and more turgid than usual. Liver in every respect perfectly healthy. Gall-bladder containing some bile of a green colour. In the peritonæum, veins florid and turgid, more especially at that part which covers the right kidney. Kidneys of a natural appearance as to size and colour. Cortical substance not so firm as usual. When cut into they emitted an odour like that of molasses. Renal capsule of a natural appearance in both kidneys. Spleen and pancreas both perfectly healthy. Bladder and prostate gland of the usual structure and appearance.

IN THE THORAX.

Left lung of a natural appearance externally. Adhesions between the pleura pulmonalis and

costalis. A vomica about the size of a large wall-nut in the superior part of the lobe, filled with viscid matter of a dark grey colour. Some smaller abscesses in the same lobe, and also some calculous concretions. Right lobe of a natural colour, adhering to the upper part of the chest, mediastinum and sternum. About the centre of the upper lobe of this lung, a tubercle of the size of a hazel nut, of a dark grey colour, interspersed with purplish spots. Smaller tubercles of the same kind dispersed through the substance of this lung. Heart natural. Pericardium containing about five drachms of a serous fluid.

IN THE CRANIUM.

Dura mater of a natural appearance.—Arachnoid coat separated from the pia mater throughout by a serous effusion. These membranes appeared healthy. Substance of the brain, particularly the walls of the ventricles, unusually firm. Ventricles containing about ten drachms of a serous fluid. Cerebellum of a natural appearance.

NOTE H.

This saccharine extract I shall call Diabetic sugar. Its identity with vegetable sugar is admitted by Doctors Henry and Prout. Dr. Home, by adding barm to the urine of his patients, Murray and Arthur, obtained what he calls a tolerable small beer; and the French chemists, Nicolas, Gueudeville and Thenard obtained by the fermentation and distillation of Diabetic sugar very nearly the same weight of alcohol that vegetable sugar affords under the same treatment.

Whenever I shall have occasion to mention the quantity of Diabetic sugar obtained, it is to be understood that the quantity of urine evaporated was always the same as above-mentioned, namely, three pints, and that the evaporation was conducted, in all the experiments, as nearly as possible in the same manner, and carried to the same extent.

CASE II.

On the 23d March, 1816, I was called to some distance to visit an elderly gentleman. He was a man of a broken constitution, had lived very freely and was aged about sixty-eight. About a fortnight previous to my visit, he had a slight attack of apoplexy, from which he recovered by bleeding and purging. He then caught a troublesome cough. A female relative, who was a member of his family, happened to read in the newspaper a flattering account of the effects of oxymel in relieving coughs. She therefore prepared some by boiling together vinegar and honey to the consistence of a thick syrup. The oxymel was left in the old gentleman's room; but what instructions he got for the use of it I do not know. It so happened, however, that in his anxiety to get rid of his cough, he drank off the whole quantity prepared, at one draught. I made accurate inquiry res-

pecting the quantity, and had reason to conclude it exceeded a pint. The immediate effect was sickness with a good deal of uneasiness in the stomach and bowels, but no vomiting. In twelve hours after swallowing this draught, he was attacked by a most profuse and distressing Diabetes. This occurred just a week before I saw him. When I visited him, I found him extremely weak and debilitated. He had an unquenchable thirst, and an urgent call to make urine at intervals less than an hour. I had reason to believe that the quantity of urine made in twenty four hours could not fall much short of ten quarts. He was drinking both wine and spirits diluted. No examination of the qualities of the urine had been made; but on attending to that circumstance, I found that it had the melleous taste and odour, both very strong. I immediately procured three pints of it, which I evaporated slowly in an earthen pipkin. The quantity of Diabetic sugar which it afforded was very great. I had not an opportunity of ascertaining that with precision; but I conjectured that it could not fall much short

of five ounces. It exhibited a granular appearance and shining crystals.

I gave such directions as I considered most suitable to the case, and took my leave: but in a few days after my visit, the old gentleman was carried off by a stroke of apoplexy.

This case I relate altogether on account of the singular manner in which the disease was excited.

OBSERVATIONS.

1st.—A circumstance of the utmost importance is usefully illustrated by the preceding history, namely, the very striking effects of regimen. On the 12th of February, when the patient was consuming in abundance, oranges, lemons and grapes, using a large proportion of vegetable food and drinking bottled porter, the daily quantity of urine was sixteen pints. On the third day after these articles had been totally withdrawn and a diet exclusively of the animal kind had been substituted, we find the quantity of urine reduced to eight pints.

2d.—It is deserving of attention that the sensible qualities of the urine marking its Diabetic character diminished in a much more rapid manner and in a much greater proportion than the Diabetic sugar. On the 11th of February, the urine had the melleous

taste and odour, both very strong; and the quantity of Diabetic sugar exceeded four ounces. On the 24th of March, the quantity of the urine was only six pints, the Diabetic sugar was as great as at first, yet the urine was less perceptibly sweet to the taste.—How it came to pass that the same quantity of Diabetic sugar should at this time communicate to six pints of urine less of the melleous flavour than it did originally to sixteen pints I am at a loss to understand. The external appearance of the sugar was the same as before.

The exact share which the different remedies had in producing this effect, it may be very difficult to determine; but I am disposed to consider opium as a chief agent. The effects of large doses of opium in controlling the quantity of urine as well as in correcting its sweetness, are well illustrated by the history of two cases which occurred in St. George's Hospital and were treated by Dr. Pelham Warren.* The power of this drug over the quantity is further demonstrated

* See Medical Transactions of the College of Physicians—Vol. 4.

by a case which occurred in the general infirmary at Northampton.*

3d.—It would seem to follow from what is observed above, that the absence of the saccharine extract cannot, in all cases, be inferred from the absence of the melleous flavour. The only positive and certain test of the existence of the disease is the evaporation of the urine.

4th.—It seems to be a point deserving of investigation whether the absence of sweetness in the urine, in cases of Diabetes Mellitus, is ever observable, independent of the exhibition of opium or other remedy capable of producing a similar effect. Should the affirmative be ascertained, might it not assist us to understand how the ancients came so entirely to overlook that species of the disease which is the subject of consideration? They were in the habit of attending only to the sensible qualities of that excretion.

5th.—When we endeavour to appreciate the value and importance of the lights that have been thrown on this subject by the

* Medico-Chirurgical Transactions—Vol. 5.

researches of Morbid Anatomy, we can scarcely avoid feeling some degree of disappointment. The general fact, in morbid dissections, seems to be that there are indications of increased vascularity about the kidneys and in the stomach and small intestines.—There are, however, several dissections in which little or no organic derangement was discovered. Of this kind is the case of H. Laurie, communicated by Dr. Pearson, and published by Dr. Rollo, p. 301. Here the kidneys and ureters were perfectly sound. The bladder much thickened and the urethra dilated.

In the case of James Neale, by Dr. Baillie,* an increase of vascularity was the chief morbid appearance.

In the Edinburgh Medical and Surgical Journal for April 1818, three cases of Diabetes Mellitus are mentioned, in all of which the patients died of tubercular phthisis with vomicae. In none of these cases was there any visible disease of the urinary organs except dilatation of the pelvis of the kidney.

* Transactions of a Society for the Improvement of Medical and Surgical Knowledge—Vol. 2.

The case of my patient exhibited only an increase of vascularity. The appearances in the thoracic cavity were referrible to another disease. The truth is that the number of dissections recorded, of a similar tendency, is very considerable. In a word, the morbid appearances which dissection has brought to our view have been so diversified, and in many instances so little marked by any very striking circumstance, that I cannot help thinking there is great reason to presume that these appearances ought to be considered as the effects rather than the causes of the disease: for there can be no doubt that diseased action, long established, will for the most part, terminate in diseased structure. It appears to me in the highest degree probable that diseased action, merely, of the kidney is capable of evolving the Diabetic sugar. If we wish to form an estimate of the wonderful changes wrought on the blood in the laboratory of the kidney, let us contemplate the facts disclosed in the following passage, which is from one of the most distinguished cultivators of animal chemistry, the learned professor of that science in the

University of Stockholm, Berzelius. It is proper to observe, that these facts are the result of the most patient and laborious investigation by experiment:—

“ By the chemical change which the blood
“ undergoes in the kidneys, a large portion
“ of its constituent parts is acidified; so
“ that the blood which enters *alkaline* into
“ the renal arteries returns from the renal
“ vessels *loaded with many acids*, some of
“ which did not at all exist in the blood
“ at its entrance, and others were present in
“ very minute quantity only. The acids of
“ the urine which do not at all exist in
“ the blood are the sulphuric, uric and some-
“ times the benzoic; the others are the
“ phosphoric and lactic. The muriatic and
“ fluoric acids appear to pass from the
“ blood to the urine without increase in
“ their proportional quantity:” and again:—
“ the action of these organs resembles com-
“ bustion in this respect that part of the
“ constituent elements of the urine, such as
“ the sulphur, phosphorus, the radicals of
“ the alkalies and earths, &c. become oxidated
“ to their maximum; and here also the

“kidneys generate some acids with compound bases.” Now if this piece of divine workmanship, the kidney, be capable of producing, by its natural and healthy action, these acids not previously existing in the blood, need we be confounded if, by an unusual and morbid action, it should produce sugar? The one operation is to us just as intelligible as the other. Sugar is a substance in its constitution allied to the acids, for it includes in its composition more than one half its weight of oxygene. The only difference which Dr. Prout could detect between common vegetable sugar and that of Diabetes was that the latter for the most part yielded a very small proportion of azote.*

But besides this unhealthy action of the kidney, something additional seems requisite to produce the effect; for the kidney, though producing sugar, still retains to a certain extent its capacity of generating urea, provided proper materials for that purpose are presented to it. I entertain no doubt that

* See Prout on the Proximate Principles of the Urine.

there is a deviation from the usual healthy crasis of the blood, before it arrives at the kidney. The stomach complaints that usually prevail, the acidity, the flatulence, the bulimia, the excessive thirst, the loaded tongue, the emaciation and the depression of the vital powers all concur to indicate that the first link of the chain of disease exists in the organs of digestion and assimilation. On the whole it appears probable that a chemical condition of the blood deviating from the healthy in being derived from an unusual description of chyle, which includes in it, substantially though not formally, the elements of sugar while it is deficient in the elements of urea, excites in the kidney that specific action by which the stimulus to secrete sugar is communicated.

I do not think that any thing can tend more effectually to illustrate and confirm this view of the subject than the second case which I have related. Here there was no reason to suppose any diseased structure of the kidney. The disease was established, in all its violence, within twelve hours after swallowing the oxymel. I conceive that the

quantity of honey and acetous acid suddenly thrown into the circulation created a condition of the circulating mass very much resembling that which is produced by the absorption of a chyle of the description to which I have above alluded; and that this condition of the circulating fluids communicated to the kidney that specific stimulus by which it is disposed to secrete sugar.

6th.—If these views of the subject be correct, it will follow that it will be in vain to expect an explanation of the pathology of this disease from those lights which anatomical research is capable of bringing to our aid. The principles of animal chemistry appear to me infinitely more likely to afford the information we are in quest of.

When we turn our attention to a review of the remedies which have been found most efficacious in Diabetes Mellitus, we shall see sufficient reason to believe that several of them can act only on chemical principles.—These are animal diet, the alkalies, lime-water, magnesia, the different sulphurets, the hydrosulphuret of ammonia, &c.

The way in which vegetable food seems

to act is by the generation of acid and by the supplying of oxygen, a principal ingredient in the composition of sugar. The chyle supplied by an acescent state of the digestive organs is unhealthy; and we may observe that the generation of acid in the stomach and the supplying of the elements of sugar from the vegetable matters thrown into it seem to be collateral effects that go hand in hand. Animal food on the contrary does not produce acid, and it furnishes azote, an element in the constitution of urea. Urea is contained in large proportion in healthy urine, while in Diabetic urine, it is altogether wanting or extremely deficient.

In the history it is mentioned that on the 10th and 16th of April, the urine showed a copious sediment, somewhat gelatinous and adhering to the sides of the vessel. The urine was not sweet to the taste. The circumstance above mentioned I considered as an indication of the partial re-appearance of urea in the urine.

The other remedies mentioned act either by obviating the generation of acid in the stomach, or by absorbing and neutralizing it

as soon as formed. It is possible that some of them may act by decomposing the acid already formed and abstracting from it that oxygen which might otherwise be employed in the production of the sugar. Whether any of the phosphurets have been tried in Diabetes I do not know. But with respect to one of them, the phosphuret of lime, Mr. Cruickshank observed that very few substances had so strong a tendency to combine with oxygen and that it was capable of destroying the saccharine quality of sugar and of converting it into something nearly resembling gum. This, no doubt, was an experiment out of the body, and the same result cannot be inferred when the agents are brought under the influence of the living principle. But it is a fair subject for experiment. Mr. Cruickshank farther ascertained that the sulphuret of potass effectually destroyed the saccharine taste and quality of a solution of sugar; and I believe this remedy has been employed with advantage in Diabetes Mellitus.

Doctor Trotter, of Newcastle-on-Tyne, has communicated the successful treatment of

two cases of this disease by magnesia alone. It was carried so far as to act as a brisk purgative. In this instance the chemical nature and operation of the remedy are obvious; but probably a considerable share of the beneficial effect was to be attributed to the Catharsis. An important practical truth does not lose its value because we may not be able to reconcile it to our theoretical opinions. It has been observed both by Berzelius and Prout that some of those remedies which ought, on chemical principles, to be efficacious in changing morbid states of the urine, became effectual only after they began to exert their purgative effects. In a case in which the urine deposited phosphat of lime and the ammoniaco-magnesian phosphat, on account of its having lost the free acid by which these salts are held in solution, Berzelius endeavoured to supply the deficiency and to restore the solvent power of the urine by administering large doses of the phosphoric acid. No effect was produced till the medicine purged. The urine then immediately resumed its natural characters and became acid and trans-

parent. These salutary effects disappeared as soon as the purgative effect ceased.

Dr. Prout also has observed the very beneficial effects of purgatives in restoring the healthy functions of the stomach and bowels and removing at the same time the urinary deposits. This he has remarked more particularly in children whose urine, in cases of derangement of the intestinal function, is often rendered turbid and white by the deposit of the phosphoric salts.

These facts illustrate the influence of purgatives on the urinary secretion and assist us in comprehending how magnesia may, by its purgative quality, influence the nature of Diabetic urine.

7th.—There are two remedies that were employed in this case with apparent advantage whose operation cannot be referred to chemical principles. These are blood-letting and opium.

The operation of the latter remedy I have considered before.

The good effects of blood-letting are sufficiently intelligible from the indications of increased vascular action which dissection

brings to view. My patient uniformly expressed comfort from the evacuation, and was solicitous for its repetition. His own expression was that he felt himself lightened by it.

8th.—Whatever may be the theory of the action of the remedies employed, it may be satisfactory to view, at one glance, the result of their combined operation. On the 11th of February, the daily quantity of urine was sixteen pints, and the Diabetic sugar from four to four and a half ounces. On the 16th, the patient's weight was nine stone seven pounds. On the 10th of July, when he ceased to be under my care, the urine was four pints, the Diabetic sugar one ounce and six drachms, and the weight of the patient ten stone two pounds.

In this interval, he lost one hundred ounces of blood, and gained in weight one hundred and forty-four ounces.*

* Note I.

NOTE I.

A circumstance has occasionally been observed in Diabetes, which has appeared difficult of explanation, namely, that the quantity of the fluid egesta has exceeded that of the fluid ingesta, and that in a greater ratio than the wasting of the body would account for.

It was at one time supposed that this might be accounted for by cutaneous inhalation. The possibility however of that circumstance has been rendered extremely doubtful, perhaps I might say disproved, by the experiments of Seguin, of Dr. Clement Rousseau, and by the observations of Dr. Curry. The last distinguished physician even alleges that Tantalus may remain immersed in his penal element for ever without having his parched blood diluted through the medium of the skin.

Another mode of accounting for the phenomenon has been proposed by the learned and ingenious professor of Botany in the University of Edinburgh. Dr. Rutherford has found, on examining Diabetic blood that it appears to be deficient in the usual quantity of hydrogen gas. He supposes that the deficient quantity of hydrogen gas has been consumed by uniting, in the lungs, with the oxygen of the atmosphere and thus forming water. The water thus generated is taken up by the lymphatics, carried to the bronchial glands and through them poured into the general mass of blood, whence it is eliminated by the kidney.

In all the bodies of Diabetic patients which Doctor Rutherford has inspected, he has invariably found the bronchial glands enlarged, which enlargement he supposes to depend on the increased action produced by the constant passage of such a quantity of water through them.

We know that the oxygenous and hydrogenous gases, when fired by the electric spark, form water. In this case then the lungs perform the office of a galvanic apparatus.

For this view of Dr. Rutherford's opinion I am indebted to an ingenious young friend who obliged me with the inspection of his notes, taken at Dr. Rutherford's clinical lecture on Diabetes. The person to whom I allude is Mr. Thomas Cuming, a candidate for a degree at the ensuing graduation at Edinburgh. I feel a gratification in saying that this young gentleman is both my relative and friend, and if I am not much mistaken, his talents and industry will one day raise him to distinction.

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*Wilkinson, printer, Telegraph-Office.*  
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THE END.

