**An essay on the effects of carbonate, and other preparations of iron, upon cancer : with an inquiry into the nature of that and other diseases to which it bears a relation.**

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AN

# ESSAY

ON THE

# EFFECTS OF CARBONATE,

AND

# OTHER PREPARATIONS OF IRON,

UPON

# *CANCER:*

WITH AN

INQUIRY INTO THE NATURE OF THAT AND OTHER DISEASES TO WHICH IT BEARS A RELATION.

By RICHARD CARMICHAEL, Surgeon.

SECOND EDITION.

CONSIDERABLY ENLARGED AND IMPROVED.

The Necessity for Operation is in Truth the Defect of Surgery.
Hunter's Lect. M. S.

All Theory is not mere idle Speculation: but Reason and Experience united, lay the surest Foundation of the Practice of Medicine.
Monro.

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1809.

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809 C

Gardiner's Place, Dublin,
Feb. 6th, 1809.

MY DEAR SIR,

WHEN I presented you with the first rude Sketch of the following Essay, I considered its theories, however just they might prove, too novel to contend against established opinions, while the facts were so few which I then could adduce in their support. They have since become more numerous, and tend so far to fortify my speculations, that I can confide them without my former hesitation, yet I hope without presumption, to the consideration of the Public. But let me repeat again and again, that whether they be received or rejected is to me a matter of indifference. They led me to a useful discovery,

and therefore have a claim to my partiality; but my partiality I am in no wise zealous to impart to others. I am satisfied with having ascertained a simple fact, that may be useful to a few individuals, that Iron in its various combinations is an efficacious remedy for Cancer of every description, tho' not in all its stages.—To guess *why it is so*, is a task undoubtedly harmless, and may be profitable; to demonstrate *that it is so*, is the sole object of the following pages, and which can alone render them worthy of being inscribed to you.

My dear Sir,

Yours faithfully and affectionately,

Richard Carmichael.

*To Robert Moore Peile, Esq.*
*&c. &c. &c.*

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# AN ESSAY,

*&c.*

## CHAPTER I.

*EFFECTS OF DIFFERENT PREPARATIONS OF IRON IN VARIOUS CASES OF CANCER, INTERSPERSED WITH PRACTICAL REMARKS.*

WHEN I first published my Essay on the effects of Carbonate of Iron upon Cancer, there was nothing I so much dreaded as the too sanguine expectation of the Public, and that a remedy that succeeded in one instance, would be required in every other to overcome this disease in all its stages, or be rejected as useless, because it could not perform impossibilities. My own hopes were but moderate, and I was careful that they should not wander far beyond

the certainty of my experience; but my experience was so circumscribed, that I could merely guess at the virtues of the medicine rather than appreciate its value.—This is a misfortune I have not now to complain of;—many and various are the cases a short interval has brought within my care or observation—alike in their symptoms, however different their circumstances—and variable the event of success or disappointment. But if experience has taught me, that in particular instances the medicine may prove inefficatious, and *must*, where the ravages of the malady are great and extensive, yet I had almost universally the satisfaction of discovering its efficacy, wherever the cancerous mass was not very much enlarged: and even when this was the case, instances were not wanting of a perfect recovery, and seldom indeed did it happen that the disease was unalleviated by the medicine.

With some little precision therefore I am enabled to point out, where it will probably succeed, and where it must unavoidably fail. To ascertain this fact has been interesting to me, and I trust will prove not unserviceable to others. I have also taken notice of some few circumstances connected with this disease, that I believe did not come within the observation of my predecessors, and which I conceive will explain a little more of its nature than we heretofore knew; an enquiry which caught all my attention and

on which I have indulged myself in opinions, or more properly conjectures ; which if they fail to throw any additional light on the obscurity of the subject, will not however weaken or obliterate the convincing facts, on which they are grounded. These establish, with all their strength, the value of the medicine, which it is more my object to render serviceable, by detailing my knowlege of its powers, than aggrandizing myself by any reputation I could derive from unfruitful speculations.

These speculations however I may be allowed to regard with some little good-will, as they occasioned the discovery of a remedy, that may prove more extensively useful than is at present imagined ; and although every improvement that presented itself, from the first trial of Carbonate of Iron, because it was an effectual remedy against *Parasitic Animals*, to that of the Sub-Oxy-phosphate, on account of its being a component part of the Blood, is owing to these same speculations, yet I never suffered myself to be so far blinded by them, as not to bring to the test, every drug that I could conceive would be useful, whether it assisted or opposed my theories, and the Arseniate of Iron, in more than one instance rewarded this impartiality with success.

With respect to my arrangement I shall in a great measure follow the plan pursued in my former edition. A place however must be found for much additional matter, and the following order will probably prove as convenient as any other.

I. A detail of the most remarkable cases which have come within my knowledge.

II. The opinions of the Ancients and Moderns concerning Cancer.

III. A consideration of the nature of Cancer.

IV. The treatment of Cancer.

V. Miscellaneous remarks on Cancer—an enquiry into the circumstances which create a predisposition in the constitution to the production of that disorder—and a disquisition on its relation to other diseases.

VI. An attempt to answer the queries of the Medical Society, established in London, for investigating the nature and cure of Cancer.

With respect to the cases they are so numerous as to require some kind of arrangement; but without any formality of classification, I shall adopt the following divisions, grounded merely on a reference to the remedy recommended, each case being stated under its proper head in rotation as it occurred.

I. Cases which were cured by the preparations of Iron.

II. Those which were alleviated, and

III. Those which were neither cured or alleviated.

## SECTION I.

### CASES OF CANCER CURED BY THE PREPARATIONS OF IRON.

### CASE I.

*Cancerous Ulcer of the upper Lip.*

On the 20th of March, 1805, Mary Hutchinson, aged 35 years, applied at St. George's Dispensary, to have advice for two foul Ulcers, situated at either side of her nose, which exactly corresponded with the description of that disease, vulgarly termed *Noli me tangere*.—These Ulcers were attended with considerable induration of the surrounding parts, but particularly of the upper lip, with a dusky redness of the integuments; and had first appeared about twelve months previous to her application at the Dispensary.

She was ordered to take pills of the extract of Cicuta and Calomel; the sores were frequently sprinkled with the Hydrargyrus Nitratus Ruber, and under this treatment were healed in ten days.

But on the 20th of April following, she again applied for relief, with an extensive Ulcer, which occupied a great part of the upper lip; its edges were high and everted, and it discharged a fœtid sanies, in which were observable in this, as well as the former attack, several hard bodies, about the size of small peas.—The surrounding parts were indurated and discoloured.

The remedies at first found successful were again prescribed, and the doses being gradually increased, were persevered in for three weeks, but without producing the same good effects—on the contrary, the disease extended itself over the whole of the upper lip, and having baffled the remedies most to be depended upon, my attention was naturally directed to the perusal of recent publications on the subject.

The grounds on which Doctor Adams founded his arguments in favour of the independent life of Cancer, seemed to me not unreasonable, altho' between that disease and Hydatids, I could not perceive any very great similarity. But this obviously led me to the consideration, that if the lives of those supposed animals were extinguished, they would be expelled from the body by suppuration,—and as Iron has been found to be very effectual, in destroying intestinal worms, I was induced to hope, that it would be equally destructive to other animals of a

parasitical nature.—I therefore felt myself justified in making trial of a Medicine in itself harmless, the effects of which more than answered my expectations.

On the 10th of May, I directed my Patient to take twelve grains of the Carbonate of Iron in pills, every sixth hour, which preparation was prefered, as the stomach would be enabled to bear a greater quantity of the metal in this than in any other state—She was also desired to make use of a lotion, composed of equal parts of Acetate of Iron and Water.

May 12, an alteration in the Ulcer was apparent ; it was no longer painful, had ceased to spread, and the ichorous discharge was changed for healthy Pus.—She was directed to continue her Medicine as before.

May 14.—The Ulcer continued to mend, occasionally discharging substances about the size of the smallest pea—the dose of the Carbonate of Iron was increased about a scruple every sixth hour.

May 18.—The inequalities on the surface of the Ulcer were almost filled up ; the dose of her Medicine was increased to half a dram, to be taken at the same periods, in the form of an electuary,—and the same lotion was continued.

May 24.—The sore was much contracted in size, and in one part cicatrized—but towards the angles of her Mouth, the edges still continued projecting—the increased dose of her Medicine had excited nausea, it was therefore diminished to a scruple, joined with some aromatic.

May 30.—The Ulcer had cicatrized, except a small speck at one angle of her Mouth, which exhibited a foul appearance, accompanied with elevation and hardness of the surrounding integuments. It continued a week in this state, when one of the small tumours before mentioned, was discharged; and the sore entirely healed in a few days.

As there still remained some induration and redness of the integuments, surrounding the cicatrice, I urged the necessity of persevering in the Medicine, from which she had derived so much benefit; but fancying herself completely cured, she paid no attention to my injunctions, and I did not see her till five or six weeks afterwards, when she returned to the Dispensary, with an Ulcer as extensive as the former, occupying the entire of her superior Lip, discharging a watery sanies, and accompanied with retorted edges, hardness of the surrounding integuments with a livid redness, extending downwards from the left angle of her Mouth.—The Ulcer thus

rapidly advancing in its progress, as long as the use of the Iron was abandoned.

July 11.—The same medicine was again administered; but in place of the lotion of Acetate of Iron, she was directed to sprinkle frequently the Ulcer, with Rust finely levigated.—On the following day, an extraordinary amendment had taken place in the Ulcer, which now discharged a healthy looking matter, assumed a mild appearance, and was free from the burning pain she complained of the day before.

The alteration of the Ulcer in so short a time was much more remarkable, than when the first trial was given to the Medicine; which effect I attributed to the local application being in a more concentrated form, than that in which it was before administered.

Under this mode of treatment, the Ulcer gradually improved, and in a fortnight after her second application to me had completely healed, with the loss however of a considerable part of her lip.—The complaint never since returned.

Whether or not the Cancerous Mass is endued with the principle of vitality, independent of the living body in which it is lodged, except so far as it derives from thence its subsistence, I may without too great an assumption be allow-

ed to attribute the removal of this Ulcer, to the exhibition alone of the Carbonate of Iron, the efficacy of which was so completely confirmed during the progress of this case, by the return of Ulceration during its omission, and the immediate amendment so evident on its second application.

## CASE II.

*Cancerous Ulcer of the upper Eye-lid.*

TERENCE BENNETT, aged 45, of an indolent and debilitated constitution, about the middle of July, 1804, observed on the inner Canthus of the superior Eye-lid, a small tumour which was not productive of any uneasiness till the following month, when Ulceration succeeded and rapidly extended along the inferior margin of the Eye-lid to the external Canthus.

At the period when I first saw him, October the 10th, 1805, a few days after his admission into the Hospital of the House of Industry, the Ulceration had nearly advanced along the Conjunctiva to the ball of the left Eye, and excited considerable inflammation of that organ—the Eye-lid was covered by a tenacious crust, on removing which a foul Ulcer was observable, with high

edges, and the other characteristic marks of Cancer.

The Carbonate of Iron finely levigated, was applied twice a day, and a preparation of that metal taken internally.

On the following day the Ulcer had evidently improved under this treatment.

On the 13th of October, three days after the first application, it had no longer a Cancerous appearance; but on an accurate examination, through its entire course I remarked small cavities, resembling those greater ones, observable in issues after the removal of peas—this appearance, I concluded, was owing to the discharge of small bodies, similar to those mentioned in the last case.

By perseverance in the above treatment, the Ulcer continued daily to mend, till the 24th of the month, when it was completely cicatrized. But the Cartilaginous border of the Eye-lid was destroyed by the disease, and the Eye-lid consequently much diminished.

It may be of service to mention, that the application of rust scarcely excited any uneasiness, and though it necessarily got into the Eye, the inflammation which existed there, subsided as the

Ulceration diminished ;—he was allowed to remain in the Hospital three weeks longer, to ascertain whether the disease would return, and was then discharged perfectly well.

## CASE III.

### *Cancerous Ulcer of the Nose.*

A very Young Lady, who in the year 1799, was attacked by this complaint, afforded an uncommon proof of the efficacy of the Carbonate of Iron.

A small pimple first appeared at the side of her Nose, which, by frequent irritation, degenerated into that species of Ulcer termed *Noli me tangere.*—Many experienced Practitioners were consulted, who informed her friends of the nature of her inveterate complaint—and at the same time prescribed Cicuta, Calomel, arsenical Lotions, and the other remedies employed in Cancer, but without any beneficial effect.

On the 10th of October, 1805, in the sixth year of the progress of the disease, Carbonate of Iron was first applied ; at which period the Ulcer was irregular, with high and everted edges, and discharged a thin Ichor, while redness and

induration extended over the greater part of her Nose, so that there were serious apprehensions, that the Cartilage and bones were engaged in the disease.

But on the use of Iron, the pain in a few hours ceased, and the application not having been disturbed for two days, a scab formed, which fell off at the end of that time, leaving the sore evidently amended, and discharging healthy looking matter.—The rust was applied daily till the 16th, when a dry crust formed, which dropping off in a few days, left the parts completely healed.

Thus this Young Lady was cured of a disease in six days, which had obstinately withstood for as many years, the most powerful remedies heretofore employed in this disorder.

## CASE IV.

*Cancerous Ulcers of the Scrotum and Leg.*

THOMAS SMYTH, aged 40, of an inert habit of body, was admitted in October 1805, into the Hospital of the House of Industry, on account of several Cancerous Ulcers, situated on the Scrotum, and one on the calf of the Leg.—The latter made its appearance eighteen months before, and was preceded by a warty excrescence about the size of a bean.—But when he was admitted into the Hospital, the Ulcer extended six inches from the Tibia to the back of the Leg, and four from above downwards.—The surface was rendered unequal by many small bodies resembling warts, and in some places, there appeared an attempt of nature, to heal this extensive superficial sore by the formation of small patches, of an imperfect skin; there was a livid redness of the integuments, surrounding the Ulcer, and he complained of frequent shooting pains.

The Ulcers of the Scrotum commenced about four months after the other; they were irregular with high edges, surrounded by discoloured integuments, extending from the Pubis to the

lower part of the Scrotum, and were accompanied with the usual pains.

On the 27th of October, these last Ulcers were sprinkled with levigated Carbonate of Iron, and he was directed to take a Pill of the same preparation containing five grains, every fourth hour.

October 30.—Two or three of the smallest Ulcers were healed—the more considerable much improved in their appearance and the shooting pain entirely gone.—This day he mentioned to me for the first time, the Ulcer on his Leg, to which I then applied the Iron, and directed him to rub in an Ointment, composed of equal weights of the Carbonate of Iron and Axunge, on the inferior part of his Leg, with the view, that the Absorbent Vessels might convey it into the neighbourhood of the disease.—The Pills to be continued as before.

November 4.—The Ulcers on the Scrotum covered by thick brown crusts—that of the Leg improved in its appearance.—In the intermediate time from this day till the 10th of November, they mended daily, insomuch that the Ulcer of the Leg, after discharging a number of the above noticed warty excrescences, was nearly covered by healthy granulations, the Scrotum, at this period was free from Cancer,

and completely cicatrized, and at the end of this month I ventured to pronounce him in every respect restored to health.

## CASE V.

### *Cancerous Ulcer of the Lips and Cheek.*

MARGARET MILLER, between 40 and 50 years of age, observed in May 1805, a small hard tumour at the angle of her mouth, which at first gave her no uneasiness, but during its increase at length attacked her with lancinating pains. By the advice of some of her friends, she applied hemlock poultices, and neglected to consult a Surgeon, fearful she would have to encounter an operation. However the tumour increasing, at length ulcerated, discharging a thin sanies, and some time afterwards a fibrous matter, which she said resembled a bundle of half rotted threads.

The Ulcer rapidly spreading, she applied at Mercer's Hospital for relief, but the disease had extended too far for operation, having to a considerable degree, affected the right cheek. Mr. Macklin, Surgeon to that Hospital, thought it a

fair and unequivocal case, for a trial of the Carbonate of Iron, and on the 21st of November 1805 placed her under my care.

At that time the parts surrounding the Ulcer were indurated, and accompanied with a dusky redness of the integuments—she complained of much pain, and for the preceding fortnight was unable to use any solid food; but whatever nourishment she took, was in a liquid state, and to prevent its coming in contact with the Ulcer, was received from the spout of a tea pot.

The Ulcer was in the first instance filled with levigated rust of Iron, and she was directed to take a pill containing five grains of that preparation every fourth hour, and to bathe the indurated parts frequently with the solution of Sulphate of Iron.

November 23.—The uneasiness and pain were much diminished, and the Ulcer discharged in place of Ichor healthy looking matter. The external applications had been constantly made use of, and the pills did not disagree with her Stomach and Bowels.—They were therefore directed to be repeated every third hour, and the surrounding indurated parts to be kept constantly wet by folded linen, dipt in the solution.

November 26.—The everted edges of the Ulcer had inclined inwards, the lancinating pains

were less troublesome, and she could now make use of solid food without inconvenience; but the surrounding redness had extended considerably.

December 1.—The lancinating pains were no longer perceptible, and the induration of the parts surrounding the Ulcer much diminished.

December 5.—The Ulcer had assumed a totally different appearance from that I first saw and no longer exhibited any characteristick of Cancer—the surrounding integuments were of a much brighter red, and the induration considerably diminished.

December 10, & 15.—The redness as well as the induration, was entirely dispersed, and not more of the Ulcer remained unhealed than the size of a pea.

December 19.—The Ulcer was this day completely healed, she was however directed not to abandon immediately the use of her Medicine, and she still continues well.

## CASE VI.

*Cancerous Ulcer of the upper Lip.*

MARGARET CARR, aged 40, of a pale sickly appearance applied to me on the 17th of February, 1806, on account of a foul Ulcer which occupied about two thirds of the upper Lip; it was covered by a thick white glutinous matter which could not be washed off, the edges were elevated and irregular, and the surrounding integuments were of a dusky red colour. It made its appearance about two years before, and was for some time very small and covered by a dry crust, which the Ulcer continued repeatedly to form and cast off; but during the last three months, the lancinating pains which were before inconsiderable became very severe, and the Ulcer began to spread so rapidly, that she was at length forced to apply for relief. She was directed to sprinkle the sore twice a day with the Carbonate of Iron finely levigated, and to take five grains of the same preparation every fourth hour.

On the 19th.—The Ulcer was covered by a brown crust, in consequence of the application of the Carbonate; the soreness and inflammatory appearance considerably lessened, and the lancinating

pains but seldom occurred. She complained of more pain on the 26th, but the scab had not been removed for several days, so that no fresh powder had come in contact with the sore. This inconvenience she was desired to remove by means of a sponge and water once a day at least.

March 6th.—The Ulcer looked much worse, and the pains returned as severely as before. She mentioned that her employment as a servant, exposed her to the constant heat of a strong fire, and prevented her paying that attention to my directions which she wished. She did not again return to me till the 29th of March, but during this interval had been running about from Hospital to Hospital seeking every where advice, and probably without adhering to any.—The Ulcer now appeared with high projecting edges, and had extended to the nose, engaging the entire upper Lip. She complained of violent pains shooting from the Ulcer towards her Eyes and Ears.—She was now admitted into the Hospital of the House of Industry, where I dressed the sore daily myself.

By a regular attention to the treatment before adopted a considerable and rapid amendment took place in the space of a few days, and the pains entirely subsided.

April 6th.—At the superior part of the Ulcer the edges had become level with the surface, but towards the angles of the Mouth it was deep and foul, and covered with the white tenacious matter before mentioned.

April 15th.—That part of the Ulcer near the right angle of her Mouth cicatrized, the opposite part remained foul with high edges.

April 20th.—More than half of the Ulcer cicatrized, and the remainder was improving daily.

May 2d.—The entire Ulcer completely healed; she remained in the Hospital till the 12th of May, to ascertain whether the disease would return: there was no induration remaining, but a considerable portion of her Lip was destroyed by the Ulceration.

## CASE VII.

*Cancer of the Uterus.*

On the 27th of February, 1806, I was called upon to see Mary Kavenagh, aged 42, unmarried and of a pale emaciated appearance.—She had been for many years afflicted with Leucorrhœa, and for the last three months was oppressed with a heavy dull pain about her Loins, but had always menstruated regularly. About the middle of the preceding December, she had a profuse discharge of blood per Vaginam, which continued violent for near a month, and had not as yet altogether ceased; she complained of frequent shooting pains about her Loins and Hips, and was so debilitated that she was confined to her bed upwards of two months. On examination the Os Uteri had a scirrhous, and I might almost say, a cartilaginous feel, but I could not perceive any Ulceration.

She was directed to take some cathartic Medicine, on account of the confined state of her Bowels, and afterwards a pill containing five grains of the precipitated Carbonate of Iron every fourth hour; she was also desired to use an injection (per Vaginam) five or six times a day,

composed of three drams of Sulphate of Iron dissolved in eight ounces of water.

March 8th.—Every symptom was considerably alleviated, the discharge had nearly ceased, the pain and sense of weight about her Loins became less severe, and she seldom perceived the shooting pains; her appetite was also better, and her strength so much improved that she was able to rise from her bed. The pills did not disagree with her stomach, she was therefore directed to persevere in the same doses of the Medicine.

March 20th.—She still continued in a gradual state of amendment; her appearance and strength were both greatly improved, the shooting pains had entirely ceased, and she only complained of the pain about her Loins; for which she was ordered to use twice a day a strong stimulating Liniment, and the dose of the Carbonate of Iron was increased to ten grains every fourth hour.

On the 4th of April, the discharge had entirely ceased, and she had not perceived any return of lancinating pains during the last three weeks.

On the 29th of April I saw her for the last time. She was so much recovered that she intended returning to the country in a day or two, but promised to persevere in the Medicine she had

been taking, and to inform me by letter if her complaints returned, but I have never since heard from her.

## CASE VIII.

### *Occult Cancer of the Breast.*

MISS G———, aged 35, of a delicate habit of body, though possessing a healthy complexion and appearance, about three years before she applied to me, (the 14th of March 1806) observed a hardness not larger than a pea in her right Breast; this gradually increased to the size of a large wall-nut, accompanied frequently with stinging pains which at length became exceedingly severe, but at other times she found a continual burning pain in her Breast.—This tumour was moveable and unattached to the skin, the nipple was not retracted, nor were the glands of the Axilla engaged in the disease.—She was directed to take five grains of the precipitated Carbonate of Iron every fourth hour, and to apply constantly to the Breast old linen cloths moistened in a solution of the Sulphate of Iron, made in the proportion of an

ounce of the salt to a pint of water—the solution was prevented from spreading and staining the patients cloathes by applying outside the wet cloths a piece of oiled silk covered with flannel.

March 21.—She complained of an uneasy sensation in her Breast, but the lancinating pains were diminished both in frequency and severity.—Since she commenced taking the Chalybeate, she had been completely relieved of a troublesome complaint to which she was long subject, a severe pain in her stomach.—She was ordered ten grains of the Carbonate of Iron every fourth hour—the lotion was continued as before.

March 26th.—The Medicine in the large doses last ordered perfectly agreed with her stomach, and she found herself much improved in her health and was totally free from pain.

On the 30th of March she told me that she intended returning to the Queens county, where she resided, on the following day. She was in high spirits at not having experienced any uneasiness or pain in her breast during the last ten days, and directed my attention to the tumour, which felt as if it had broken or separated into two parts. The lotion had produced a papular eruption on the Breast, so that she was obliged to lay it aside for a few days, but on her return to the country she continued to persevere

in that as well as in the internal use of the preparation of Iron for several months.

On the 2d of May I received a letter from my Patient, stating, that she persevered regularly in her Medicine, that she was totally free from every description of pain, but that there was little alteration in the hardness of her breast since she left Dublin. I presume she is well, as it was her intention to write on any return of her complaint.

## CASE IX.

### *Open Cancer of the Breast.*

On the 7th of May, 1806, I was called to see Mrs. R———, aged 59, who tho' of a delicate constitution had a healthy complexion and appearance for a woman at her period of life.—There was a hard insensible tumour of a dark liver-colour, about the size of a turkey-egg, projecting from the center of the right Breast; the integuments had withdrawn themselves from this tumour by an inflammatory line of separation similar to that we observe to take place in parts which are mortified, but this did not go deeper

than a quarter of an inch.—The tumour, tho' it engaged the greater part of the Breast, was not attached below, nor were the axillary glands affected.—I shall give the history of her case in Doctor Barlows words, under whose care she was, before her application to me, and tho' its favourable termination is anticipated in his letter, yet I shall detail from my notes the progress of her amendment, as I make no doubt so remarkable a case must excite the attention of every Practitioner.

SIR,

As you desired, I enquired of Mrs. R——— how long she had the hardness in her Breast, before she applied to me.—She told me "she "perceived the *hard lump* in her Breast still in- "creasing in size for several months, it then "became painful, with frequent darting pains "which grew more troublesome every day for "some months."

When I first saw it there was a hard irregular tumour, a very small Ulcer just at the Nipple, and a darkness of the skin almost the whole extent of the tumour, which left me in little doubt of all that part becoming ulcerated in a very short time; and from every appearance, with the shooting pains and burning heat which she complained of, I had no doubt in my mind of its being *a confirmed Cancer*.

She began to take the Carbonate of Iron as you directed in your Essay, five grains every fourth or fifth hour, and the Ulcer was not only sprinkled with it, but all the discoloured part was covered with it wet, in form of a Poultice; this was renewed twice a day. In three or four days, the diseased skin began to separate all round from the sound, which separation still continued to get deeper every day, so that part of the hard tumour was evidently separated to a considerable depth from the sound part of the Breast; and from the good matter produced and the healthy appearance of the surrounding edges, I had every expectation that the tumour would in time, by the application of the Carbonate, be entirely thrown off by the sound parts. She went then under your care, and since her return home has continued in good health, with her Breast (which she shewed me) perfectly healed and free from either pain or hardness.

I hope I have been as particular as you wish; if not, any information in my power shall be given with pleasure by,

Sir,

Your much obliged very

Humble Servant,

J. BARLOW.

*Moat, February 1st,* 1807.

During a week after her arrival in Dublin, I pursued the plan adopted by Doctor Barlow with the addition of a solution of Sulphate of Iron in water, in which folded linen was moistened and applied to the integuments surrounding the Ulcer.

On the 14th of May, for the purpose of bringing the remedy into contact with the living Cancerous substance, I pared off as much of the surface of the tumour as did not bleed upon being cut—this mass was of a dark liver-colour, but on a close examination there appeared intersected thro' its substance white streaks of a firmer consistence; the diseased part was then covered thickly with precipitated Carbonate of Iron, over which was laid lint spread with some mild ointment, in order to protect the edges of the sound skin at the line of separation, which were highly sensible, and discharged healthy matter.—She took ten grains of the precipitated Carbonate of Iron every fourth hour without feeling her stomach or head unpleasantly affected.

May 19th.—The application of the Powder, after the surface of the diseased mass was pared off, excited a good deal of uneasiness and inflamed the edges of the Ulcer.

On the 21st, I took away more of the tumour —on first cutting it, it was of a dark coffee-

colour and very offensive to the smell, but according as I got deeper the white substance which ramified thro' the dark, became so apparent as to be evidently the same gristly mass which composes all cancerous tumours.—The separation of the sound from the diseased parts had also become deeper.

May 23d.—The surface of the tumour had again assumed a dark liver-colour, notwithstanding that two days before it had exhibited, on being cut, a white gristly appearance.—I again removed as much of it as did not give out blood, during which operation the knife struck against some gritty substance like bony spiculæ situated in the centre of the diseased mass.

May 26th.—She had been totally free from pain the last six days, the surface of the tumour had again assumed a dark colour and an irregular appearance; on taking away more of its substance that day, she lost about an ounce of blood.

May 28th.—The surface of the diseased part was so much lowered as to be on a level with the sound integuments of her breast.—She complained since the last dressing of heat and uneasiness in the sore, and numbness down her arms to her fingers; which prevented me from proceeding in the removal of more of the diseased mass, although it exhibited the dark liver-

colour.—The extent of the Ulcer which was nearly circular, was about nine inches in circumference.

June 2d.—The inferior portion of the diseased mass had begun to increase, and again projected beyond the surface of the Breast; it was of a greyish colour, and bled upon being touched by a sharp instrument.—At this period, despairing of being able to conquer the portion I speak of with the Carbonate, I resolved to try sulphate of Iron reduced to powder.

This application gave very great pain and inflamed the entire Breast, in consequence of which a large emollient poultice was applied the following day, and continued till the 8th, when the inflammation having entirely subsided she was dressed with Carbonate of Iron as before.

On the 10th.—I removed a very considerable portion of the diseased mass, in which there seemed to be equal parts of the liver-coloured and of the white cartilaginous substance before mentioned, among which the extraordinary phænomenon appeared of irregular bony masses, resembling the spongy portion of the Ethmoid bone, and which on a former occasion had resisted the knife; the scirrhous substance by this operation was so much reduced, that the hollow

of the Ulcer could contain a considerable quantity of the powder.

June 12th.—I removed more of the scirrhous substance, the entire of which had the white Carcinomatous appearance—from the bottom of the sore a quantity of healthy looking Pus was discharged, which convinced me that the sound parts had to a considerable depth separated from the diseased.

June 18th.—The bottom of the Ulcer was covered with the white tenacious matter I have so often observed in cancerous Ulcers, particularly those of the face; and its cavity was so much increased by the removal of the scirrhous mass that it required above an ounce of the powder to fill it to a level with the surrounding integuments; a just idea of the quantity of scirrhous removed may be formed when it is considered how far it had projected beyond the integuments.

June 24th.—The bottom and sides of the Ulcer still appeared of a hard insensible and gristly nature, but for many days there had not been any appearance of the dark liver-coloured substance.

At this time I was enabled to make use of a remedy, a trial of whose efficacy I had long me-

ditated, and the idea of which had been suggested by the state in which Iron exists in the blood, united with Phosphoric acid.

The cavity of the Ulcer was *sprinkled with Phosphate of Iron* which at first excited considerable smarting, but I was obliged to order her to desist from the internal use of the Medicine, on account of a troublesome cough which affected her during the last fortnight, and within the last three days had been incessant and severe.

June 29th.—The discharge was white and tenacious, being evidently for the most part composed of the Carcinomatous substance dissolved and thrown off—She was dressed daily with the Phosphate of Iron.

July 4th.—The greater portion of the sore was covered by Granulations, but at the deepest part was a thick white slough of the Carcinomatous substance connected with a root that pierced downwards towards the Axilla.

July 8th.—The sore had contracted considerably in size by the increase of the Granulations, but the white slough was not thrown off.—Her cough was much improved, and the Phosphate of Iron was continued.

This preparation is of a light blue colour, and its beneficial effects led me to expect still greater from the Oxy-phosphate of Iron, which is perfectly white; a circumstance that induced me strongly to suppose that it was the *secret remedy* used with great success early in the last century by Petrus Alliott. I prepared some at this time, and the advantages I derived from its use, and its similar mode of action, confirm me in the opinion. It was applied to the Ulcer wet from the filter on the 10th of July, and the amendment of the Patient was evidently more rapid than before.

July 14th.—The slough had become looser and appeared more extensive.—She had so far recovered from her cough that she recommenced the internal use of the Carbonate of Iron, taking five grains every fourth hour.

On the 21st of July, I was able to take away the slough which was nearly three inches in length, with the forceps; it bore a near resemblance to the ropy matter or core which is found in large abscesses upon their first being opened.—Upon the removal of this substance, the Ulcer appeared very deep, and undermined the skin to a considerable depth;—after this it filled up rapidly, on the 30th appearing like a sinous Ulcer, into which the probe passed more than two inches.—On the 14th of August the Granu-

lations had encreased to such a degree, that the remaining sore did not contain more of the powder than the bulk of a common pea, however I advised her to continue the application of the Oxyphosphate has long as she could preserve the sore open ; this she did not long observe, for on her going to her residence in the county Westmeath a few days afterwards, she forgot to dress the sore and found it perfectly healed on her arrival. —At the time she left Dublin there was not the least degree of induration perceptible in her Breast—nor had she felt any lancinating pains for a considerable time previous to her departure.— I advised her strongly to persevere in taking daily a small portion of some Chalybeate Medicine, and I am informed by her friends that she continues to the present day, July 1808, to take a pill, containing five grains of the Carbonate of Iron, morning and evening, and also that she drinks daily the water of a strong Chalybeate Spa in her neighbourhood.—She has had no return of the complaint, and actually enjoys better health than she did for many years previous to the commencement of the disease.

## CASE X.

### *Occult Cancer of the Breast.*

In July 1806, I was requested to see, with Dr. Toole, a young Lady about 24 years of age, who was afflicted with a Cancer in her right Breast.—On examination both the Breasts were found to be greatly enlarged, but below the right nipple she pointed out *a hard lump* situated in the midst of the Glandular structure of the Breast; and mentioned that she had frequent severe shooting pains in the part.—Her mind was so distressed on the occasion that she earnestly requested that the Breast might be taken off; but she was recommended to try the effects of Medicine, before recurrence should be had to an operation of so much moment.—Ten grains of the precipitated Carbonate of Iron was accordingly ordered to be taken three times a day, a weak solution of Sulphate of Iron to be constantly applied by means of linen compressees to the Breast. She persevered for three months in this course, during which time her general health greatly improved, the lancinating pains almost

entirely ceased, and she conceived the tumour was much lessened. At this period she was obliged to intermit her Medicine, on account of the return of severe attacks of Dyspnœa to which she had been long subject.—She was greatly reduced by this complaint, and during its continuance the shooting pains returned, which threw her into such despondency, she again insisted upon having the Breast extirpated.—This I told her I did not conceive to be yet absolutely necessary; and added, in order to satisfy her mind, that it would be right to have farther advice on the subject. In consequence Mr. Richards and Mr. Piele were called in, who were of opinion that the operation would be improper, as they were not convinced that the disease was cancerous and that an operation of so great importance should not be undertaken, unless its necessity was very evident.—She afterwards resumed the Ferruginous preparations, but took in place of the Carbonate, ten grains of Oxy-phosphate of Iron three times a day, and applied to her Breast a lotion composed of one part of Acetate of Iron to three of water. Under this treatment the lancinating pains began to diminish in frequency, and soon entirely ceased; the hardness gradually became less evident, and after six months, during which time she persevered in the use of the Medicine, was not perceptible. She has since been married and has issue, and at present enjoys the most perfect health.

Notwithstanding the respectable opinions I have mentioned, there is no doubt in my own mind but that the disease was an occult Cancer; but I must expect that those who believe that Cancer can only be cured by extirpation will think otherwise.—Mine is grounded on the circumstances of the small beginning of the tumour, and its gradual increase for two years together, with the almost infallible symptom of lancinating pain which accompanied it. I do not conceive that her youth affords an argument for the negative; because the hardness in the Breast was preceded by a severe contusion, a circumstance which we know may supply the place of the Cancerous predisposition, that takes place about the age of forty*. If the disease was merely a general enlargement of the Breast we should naturally expect that the left Breast would be equally affected, and that the Patient would have discovered *a hard lump* in that as well as in the other, which however was not the case in the smallest degree.

A general enlargement of the Breasts, appears to me to be also a predisposing cause of the production of Carcinoma, as an increase of substance takes place probably without a proportionate increase in the quantity of blood sent to the part; or in other words, the quantum of vital powers in these organs remained stationary,

* See chap. iv. sect. 2. where this subject is considered.

or nearly so, while at the same time their volume was greatly increased *. To this cause of predisposition in this instance, was added an injury to the organization of the Breast, in consequence of a severe contusion; both of which circumstances united, are in my mind sufficient to explain the attack of Cancer at so early a period of life, altho' she had not the appearance and complexion of a person predisposed to the disorder. I have observed in a great variety of cases, that when Cancer takes place in persons of a healthy complexion, in which there is a due proportion of red, the disease is slow in its progress, and the Carcinomatous substance never arrives at a large bulk, while the disease yields much sooner to the ferruginous Medicines, than in persons of an opposite appearance and temperament.

These considerations I think sufficient to account for the attack of Cancer in a young person of an apparent healthy appearance, and for the fortunate termination of the disease under the use of the preparations of Iron.

* See Miscellaneous Chapter.

## CASE XI.

*Cancer of the Nose.*

CATHERINE WALSH, aged 60, applied to me on the 10th of October, 1806, with an indolent Ulceration of the Nose, which had produced much deformity, by destroying the greater part of the Alæ and exposing the septum Nasi.—This Ulcer had existed a long period, supposed by the Patient to be not less than 20 years, and she attributed its origin to an unmanly practice in which her husband indulged himself of pinching her Nose whenever he wished to give her a hint of his displeasure.

For the first month the Carbonate of Iron was daily applied, but without producing the smallest amendment. The Phosphate of Iron was then tried with somewhat a better effect, as the sore healed in one or two places, and she persevered in its use till the middle of December. After this I did not see her for two months, but in the February following she came to me with the Ulcer as extensive as before, having neglected my prescription. I then had recourse to the Oxy-

phosphate of Iron, which was applied while wet from the filter; under its use an immediate amendment was observable, the discharge became thicker and granulations made their appearance, and the sore in the beginning of March completely healed; I have repeatedly since seen her and there has not been any return of the Ulceration.

## CASE XII.

*Open Cancer below the Breast.*

TERESA TRAVERS, aged 40, of a florid complexion and spare muscular habit, applied to me on the 30th of October, 1806.—She complained of violent shooting pains from an Ulcer situated on her right side below her Breast, so severe that she could not avoid crying out when they affected her. I expected to find, in consequence of the symptoms and the history she gave of her complaint, an Ulcer bearing all the marks of Cancer, but on the contrary, I found it had very little or none of the appearances usually attributed to that disease; but I assume that it was a true Cancer from its origin and progress, its lancinating pains, and I shall venture

to add, the quick relief afforded by the preparations of Iron.

Over the seventh and eighth Ribs there were two or three small Ulcers of a sinous nature, the edges of the skin surrounding them were callous, and the neighbouring parts undermined to the extent of half an inch or more. There was a glutinous thick ropy matter diffused over each, and the integument, for about the circumference of nine inches was of a dusky red colour; the probe could not pass from one to another, nor down to the Rib, which I suspected might have been carious.—The following is the history she gave of the disease. About three years before, she received by a fall a violent contusion on her right Side in the spot where the Ulcer was situated, which produced severe pain and difficulty of breathing—but these complaints were relieved by means made use of at the Dublin General Dispensary, Bleeding, Blistering, &c.—However she afterwards had frequent and severe shooting pains in the same place; and about two years after the accident, observed a small lump not larger than a nut, in the very spot where she felt these shooting pains.

The tumour gradually enlarged to the size of a wall-nut, the lancinating pains at the same time becoming more severe and frequent.—She applied to several Surgeons for advice, who told

her the disease was Cancerous, but did not administer any effectual relief.

About two months before her application to me, she had received a blow on the tumour, which put her to great pain, and Ulceration quickly followed; there were no remains of the tumour except the small Ulcers I have mentioned, surrounded for a considerable extent, with a dusky redness of the integuments—these I filled with Phosphate of Iron, and in two days afterwards she told me that the shooting pains were less severe. Out of the upper opening there was a cord of that white tenacious matter which I have so often observed in Cancerous Ulcers, and suppose to be the Cancerous substance itself, dissolved by putrefaction.——On laying hold of this in the forceps, I found it was firmly connected above, and that the slightest effort to remove it put her to excessive pain.—She was directed to continue daily the application of the Phosphate of Iron in the manner I have described above.

On the 5th of November, I found the shooting pains had been considerably alleviated, I dilated the Ulcers by one simple incision as far as the skin was undermined, by which means more of the powder could be brought to act upon the diseased part—the same dressing was continued and she was directed to take fifteen grains of the

precipitated Carbonate of Iron three times a day.

November 11.—The lancinating pains seldom occurred, and when they did were not severe.

December 3.—The Ulcer was entirely healed, and she had felt no pain whatsoever since the 17th of November.—But the integuments still continuing discoloured, I directed her to keep them moist by means of cloths dipped in a lotion composed of one part of the tincture of muriated Iron and four of water.

Six months after, on the 11th of June, 1807, she again came to me.—About three inches above the part formerly diseased, a similar redness and induration had taken place with two small sinous openings which discharged a thin ichor.—She complained of the most severe lancinating pains, and there was a small hard tumor somewhat below the Axilla.—On introducing the probe into one of these openings it passed freely for several inches under the discoloured integuments, which I laid freely open with a bistoury, and when the oozing of blood had stopped, filled up the cavity with Oxy-phosphate of Iron. The discharge in a few days changed to a thick consistence, the shooting pains ceased, and the sores entirely healed in three weeks. The small lump in the Axilla disappeared in the same interval, and she never afterwards had any return of the complaint.

## CASE XIII.

*Open Cancer below the Breast.*

MARY JUDGE.—A poor woman residing in Palmerstown, aged 50, applied to me on the 4th of December 1806, with an Ulcer nearly resembling that of Teresa Travers just related, but more extensive and situated immediately under the left Breast.—There was a dark red patch about the extent of the palm of the hand, firmly adhering to the Ribs underneath; it was of a shining dusky red colour, resembling the new skin which forms upon an extensive Ulcer.—In different parts of this integument were small openings which discharged a thin sanies, in one the probe passed for about an inch into the left Breast. The whole extent of the diseased part was extremely irritable and excited great pain when handled, and she complained like Teresa Travers of the most severe and frequent shooting pains.

She informed me that about a year before, she observed a small hard lump or kernel under her left Breast, which at first gave no uneasiness, but

afterwards she felt shooting pains in it. In the May following this tumour ulcerated, and the pains became more severe, in consequence of which she applied at Jervis Street Hospital for relief, where she attended daily for two months, during which period Caustic was at one time applied, and at another she was ordered to poultice it with Hemlock; but not finding any benefit by these remedies she attended at the Meath Hospital, where she was directed to persevere in the Hemlock poultice without any change of effect.

I ordered her to keep a solution of Sulphate of Iron applied to the diseased part, and gave her some Phosphate of Iron mixed with the white of an egg to introduce twice a day into the small openings above described.

December 12.—The pains were somewhat relieved, but there was not any apparent alteration in the part; the probe on being introduced into two of the openings, passed at least two inches in every direction under the skin, but notwithstanding my importunity she would not admit of their dilation by the knife.

January 1st, 1807.—There appeared no alteration whatsoever in the diseased part, a very minute portion of the Phosphate of Iron could be applied at each dressing owing to the smallness

of the ulcerated spots, however her pains were somewhat alleviated.—I now ordered her for the first time precipitated Carbonate of Iron, ten grains of which she was desired to take three times a day.—From this period a more rapid amendment took place, and on the 6th of April the sores had entirely healed without any return of the shooting pains, but the integuments were still discoloured. I saw her three months afterwards, the integuments had nearly recovered their natural appearance and she enjoyed perfect health.

## CASE XIV.

*Cancerous Ulcer of the Nose.*

PETER BRYAN, aged 15, was sent to me on the 20th of March 1807, by Dr. Ferguson of Leixlip; he had a foul irregular Ulcer occupying the left Ala and extremity of his Nose, and covered with the same white tenacious matter I had so often observed in cancerous Ulcers. This Ulcer extended considerably within the nostril, and was covered by a thick crust which filled the entire cavity, and adhered so firmly that it could not be removed without difficulty. The Nose was greatly enlarged and discoloured, and appeared as if the bones and cartilages were diseased.

About fourteen months previous to his application to me, a small wart-like excrescence appeared on the extremity of this organ, which by frequent irritation and picking degenerated into a foul corroding Ulcer. About a month before I saw him, Dr. Ferguson gave him some Carbonate of Iron with directions to sprinkle it daily on the Ulcer; this application almost im-

mediately eased the pain, which seemed sufficiently to satisfy the Boy, as he neglected to persevere in its use, nor was he afterwards more attentive to my directions.

I sprinkled the Ulcer with Oxy-phosphate of Iron, over which I placed lint spread with mild ointment; and gave him a small quantity of the powder to carry to the country, which I directed him to apply in the same manner, and also to take ten grains of Carbonate of Iron three times a day.

He came to me once a fortnight, and notwithstanding the careless manner in which the remedy was made use of, the Ulcer had improved, and by the beginning of May put on a healing appearance—but his Nose was at that time much swelled, and the nostril of the left side filled with the dry crust before mentioned.

June 16th.—The Ulcer had very nearly healed, and the tumefaction and discolouration of his Nose were considerably lessened. It cicatrized shortly afterwards and continues perfectly well, but I may premise that if the application had been attentively and properly used, his recovery would probably have taken place in a fourth part of the time.

## CASE XV.

*Cancer of the under Lip.*

I have now to relate a case, in which a remedy different from any that I had hitherto tried, proved successful; the preparations already mentioned in a great measure failed, and the inveteracy of the disorder resisted every application, except that to which I allude, *Arseniate of Iron.* This addition of the Arsenious Acid is far from supporting my theory; I tried it because Arsenick had been recommended by others, and its utility in the form I used was undoubted. Some future investigator may do more than I am able in reconciling this circumstance to my theory, or perhaps more satisfactorily make it a foundation for overturning my speculations.

The Patient was WILLIAM CARR, aged 60, he had the entire under Lip indurated, enlarged, and on its upper surface ulcerated, accompanied with lancinating pains and every other characteristic of Cancer. He was a pale emaciated wretch, and the greater part of his life an habitual dram drinker.—The disease had been very slow in its

progress, and had commenced seven years before, according to his own account, like a common blister. Before his application to me he resorted to Jervis Street Hospital, where the late Mr. M'Evoy told him his only chance was to submit to an operation.

On the 14th of April 1807.—Oxy-phosphate of Iron was applied to the Ulcerated part of his Lip, and he was ordered fifteen grains of the Carbonate three times a day.—This treatment was persevered in for six weeks, during which time the appearance of the Ulcerated part considerably amended; and in place of the dry crust with which it was concealed, it was found covered at each dressing with white tenacious matter, and from being totally insensible, strange as it may seem, had become extremely irritable.

From the beginning of June till the middle of July, the Ulcer was dressed with Sub-Oxy-phosphate of Iron, a preparation I have since found of the greatest efficacy in this disorder, tho' it produced in this case but little benefit; my chief motive for making use of it was its solubility in animal fluids, tho' I acknowlege its agreement in other circumstances which shall be mentioned hereafter, with my speculations, was no small inducement; this preparation always excited severe pain for eight or ten minutes after its application, but under its use

the scirrhous part of the Lip increased in volume, tho' it diminished in hardness,—from the time he came under my care he had not felt any lancinating pains.

On the 29th of July, finding the disease stationary, neither improving or growing worse, I resolved upon trying the Arseniate of Iron, which Mr. Accum of London had just prepared for me. About a scruple mixed with the white of an egg was applied to the Ulcer, the pain which followed was trifling, but the entire scirrhus tumour became considerably swelled.

On the 1st of August the surface of the scirrhus was of a brown colour and insensible to any stimulus. I removed the slough with the knife, and renewed the application to the living part of the diseased mass.—On the following day the entire Lip was much swelled, altho' the application only excited a sensation of heat, and did not produce a greater degree of smarting than the Sub-Oxy-Phosphate of Iron.—I remarked that the fine skin of the Lip, a part of which remained, was not affected by the Arseniate; tho' the adjoining Cancerous substance was rendered of a brown colour, and was swelled like a moistened sponge. During the remainder of this month the Arseniate of Iron was generally applied every third day, and as much of the diseased substance occasionally removed,

as had become insensible and of a brown colour; in consequence he lost the greater part of the Lip which was engaged in the disease, so that he found a difficulty to retain his saliva or any liquid in his mouth. Towards the end of the month the effects of the Arsenious Acid on the constitution became evident, by the occurrence of frequent chilliness, loss of appetite and general debility.—I therefore thought it advisable to lay aside the Arseniate, and adopt once more the Oxy-phosphate of Iron; and under its use his general health improved, more of the diseased mass came away, a good discharge succeeded, and about the 14th of September the sore entirely healed, without leaving any perceptible induration behind. He however did not long survive his deliverance from Cancer, for in the latter end of the succeeding November, he was seized with Typhus Fever, for which he was admitted into the Hospital of the House of Industry, where he died. After his death I took the opportunity of examining his body.—There was no vestige of any remaining Carcinomatous substance on his face—in the brain there was nothing remarkable, but the lungs were full of *Tubercles* and *Vomicæ*, the Œsophagus thro' its whole length was thickened in a remarkable manner, and in the stomach near the Cardiac Orifice there was a tumour the size of a hazel nut, on dividing which it exhibited the same structure as other Carcinomatous tumours.

## CASE XVI.

*Open Cancer of the Breast.*

DIANA BLACKBURNE, aged 58, applied to me on the 6th of July 1807, with an open Cancer of the Breast, the Ulcer deep and irregular, with elevated edges, was about the size of a half crown piece, and situated in a scirrhous mass, which engaged at least a third of the Breast —part of the nipple had been destroyed by the disease, and the remainder, which was undermined by the Ulceration, appeared as if ready to drop off.—The lancinating pains were frequent but not very severe; she was of a healthy complexion and appearance, and had not in any degree the sallowness which in general accompanies Cancer. She attributed the disease to a severe contusion which she received on her Breast about eighteen months before, as she observed, about three months afterwards, on the spot where she was injured, a small lump *like a kernel*, which gradually increased to the size of the fist, and it became ulcerated eleven months after its first attack. She appeared of so strong a constitution, that I ordered her thirty grains of the Carbo-

nate of Iron three times a day, which she took without any inconvenience, and I dressed the Ulcer in the usual manner with the Oxy-phosphate of Iron.

On the 12th of July, she was entirely free from shooting pains, but no other alteration was observable till the 18th.—Therefore in place of Carbonate she was ordered to take twenty grains of the Oxy-phosphate three times a day.

26th.—There was a considerable degree of soreness and inflammation of the entire Breast, the integuments of which surrounding the Ulcer had become of a bright inflammatory red colour, but notwithstanding the increased sensibility of the part there were not any shooting pains.

29th.—She informed me that several large lumps or subtances like cores were discharged from the Ulcer, one of which she said was hanging loose from the sore. I found it to be precisely of the same appearance as that discharged from Mrs. R——'s Breast,* which I have already described. The Ulcer had become more extensive and was covered with a white cohesive matter which could not be washed away.

August 5.—The Ulcer had a more healthy appearance, and its sides were closing towards each

* Case ix.

other. I wished to remove the nipple, which hung loosely over the excavation of the Ulcer, connected to the Breast only by a small slip of integument, and producing great irritation, but she would not allow me.—She informed me that many ropy substances, some above three inches long, had come away with the discharge.

10th.—The sore which had closed to nearly one half of its former size, appeared much improved, and discharged thick purulent matter.—The external application of the Oxy-phosphate of Iron was still continued, and the same prepartion was taken internally in large doses as before ordered, and agreed perfectly well with her stomach.

September 2d.—The Breast seemed entirely free of induration, except at the superior part of the sore, where some hardness was perceptible, in which she felt occasionally slight stinging pains; to this I applied about ten grains of the Arseniate of Iron, which on the 8th, when I again saw her, had caused the Ulcer to enlarge, by producing a slough and a more considerable discharge.

September 20th.—The Ulcer was diminished so much, that it might be covered by the point of the finger; its reduction seemed not so much to be owing to the formation of granulations, as to the closing of its sides towards each other, which gave the surrounding integuments a pursed appear-

ance. The induration was much less perceptible on the superior part of the Ulcer, and the pains had altogether ceased. The Oxy-phosphate had been in perpetual contact with the Ulcer since she came under my care, except on the 2d of September, when the Arseniate of Iron was applied —and she was now directed to persevere with the former of these preparations.

The Ulcer continued stationary until the middle of October, about which time, it became extremely sore and irritable, with an increase of the discharge and an inflammatory redness of the surrounding integuments.—Conceiving that this inflammation was owing to the stimulus of the dead Carcinomatous substance on the sound parts, I directed the application of emollient poultices, with the view of assisting the separation of the slough.—With these she persevered till the end of the month, during which time, large white sloughs similar to these already mentioned were discharged. The Ulcer in consequence became more open and extensive, but its edges were soft, and there was not the least induration discoverable in any part of the Breast. About this period I sent her to Mr. Richards and Mr. Piele, with a request that they would examine her Breast, as this case I thought as strongly evinced the efficacy of the preparations of Iron as any which had yet occurred to me.—After the separation of the sloughs the discharge

became thick and purulent, the sore filled with granulations, and was completely healed in less than a fortnight. I saw her three months afterwards, when she told me she had not felt the slightest pain nor induration, but continued perfectly well.

## CASE XVII.

*Cancerous Ulcer of the Nose.*

ELIZABETH SLAVEN, a healthy looking Child, 12 years of age, was brought by her Parents from the town of Kildare, for admission into the Hospital of the House of Industry, in the beginning of March 1808. There was an Ulcer situated within the nostril, the extent of which it was impossible to discover, on account of the scabs which filled the nostril; but the greater part of the Nose was swelled, of a dusky red colour and painful to the touch. She had had this Ulcer upwards of a year, accompanied with stinging pains; it resembled almost in every particular the appearances described in Case xiv. and was owing to a similar cause, for on being questioned, she said that prior to the Ulcer, she had been in the habit of constantly picking her Nose.

The Carbonate of Iron was applied on her admission, and an immediate amendment took place, as the pain, redness, and swelling of her Nose began to decline, and the Ulcer mended so rapidly, that in four weeks the scabs were entirely removed, and the Ulcer healed. She was discharged the Hospital perfectly well on the 15th of April 1808.

## CASE XVIII.

*Occult Cancer of both Breasts.*

MRS. L———, residing in Charlotte Street, a Lady about 40 years of age, of a pale sallow complexion, applied to me in April 1808, on account of a hard tumour in each Breast, attended with severe shooting pains; the chief mass of the tumours was situated between the Nipples and Axillæ, and the hardness could be traced running along the lower edge of the pectoral muscles, even into the Axillæ; but this was more evident on the right side where it felt (if I may be allowed to make use of an odd comparison) like thongs of leather loosely platted. The arm of that side she told me was frequently swelled, attended with numbness of her fingers.—She dated the origin

of her complaint so far back as the year 1799, and ascribed it to the anguish of her mind on being suddenly reduced, with a young family, from affluence to a precarious mode of subsistance, in consequence of having lost her husband, who was killed by the rebels in the county of Wexford.—This Lady was not the only person under my care, afflicted with this disease, who supposed it owing to a continued state of grief and despondency. It has been observed by more than one writer on the subject, and there can be scarcely a doubt of the fact.

She was put upon a course of the Ferruginous Preparations, tho' I own, on account of the occasional swelling of her Arm and numbness of the Hand, I had little hopes of their proving serviceable; but it was not long till I had the pleasure of relinquishing this opinion. She was ordered ten grains of the Sub-Oxy-Phosphate of Iron three times a day, and to apply to the Breast a lotion composed of Acetate of Iron diluted with five or six times its weight of water.—After she commenced this plan the lancinating pains became gradually milder, and soon entirely ceased; three days after she began to take the Medicine, she passed some large worms, a complaint of which she had not the slightest suspicion.

She persevered with little alteration in the plan above mentioned for four months, with a

surprising amendment, not only with respect to her local complaints, but as to her general health, the hardness in her Breasts became far less evident, and appeared to be gradually decaying; the lancinating pains, which were formerly very distressing, did not occur after taking the Medicine three weeks, nor has the swelling in her Arm since occurred; her appetite, appearance, and general health are improved to a degree that neither she nor her friends ever expected, and in October 1808, any remaining hardness in her Breasts was scarcely discernable. She however still continued to persevere in the external and internal use of the ferruginous Medicine.

## CASE XIX.

*Cancerous Ulcers of the Face.*

MICHAEL DOYLE, 60 years of age, was admitted on the 4th of June 1807, into the Hospital of the House of Industry, on account of the following appearaces.

His entire upper Lip was indurated, and of a dusky red colour, the discolouration extending a considerable way over the Cheek. On this diseased part there were three or four Ulcerated spots, the largest of which was situated on the edge of the Lip, and might be covered by the point of the finger; the others were so small as scarcely to admit a common sized pea. When there was no application made use of, they were covered by thick crusts—on removing these, the Ulcers were seen with elevated edges and covered by a glutinous matter, the surrounding skin had the appearance of being undermined by the Ulcers, but a probe would not pass from one to an other. To the white glutinous matter which is found upon Cancerous Ulcers, I

would particularly call the attention of Practitioners, as its presence or absence in doubtful cases may assist us in forming a just diagnosis.

Upon Ulcers of this description, the preparations of Iron frequently act like a charm. In the present instance, the common levigated rust of Iron was applied; two days after its application, I was told by the young Gentleman who dressed him in the Hospital, that there was an evident amendment, and that the Patient said the stinging pains had been entirely removed. By a perseverance in its use, and bathing the discoloured part frequently in a solution of Sulphate of Iron, the sores were healed in ten days or a fortnight, and he was discharged the Hospital apparently well. However, by laying aside the Medicine too soon, there was a return of the Ulceration for which he was in a month afterwards admitted again into the same Hospital; after remaining a fortnight, and attending better to the directions he received, he recovered rapidly and still continues well.

## CASE XX.

*Open Cancer of the Breast and Axilla.*

In July, 1806, I was consulted by Mrs. H———, an elderly Lady of a healthy complexion and appearance, respecting a cancerous induration and Ulcer, situated immediately below the Axilla upon the ribs: the ulcerated spot was small, but the induration was about the extent of the palm of the hand; the integuments covering it were discoloured and wrinkled.

The disease she attributed to a hurt received upwards of six years before, to which a hard lump like a *Kernel* succeeded, that gave no other uneasiness than that excited by occasional slight stinging pains; but some months previous to her application to me, it became more painful and its increase more evident; when she consulted Dr. Callanan and Doctor Longfield of Cork, men of the first professional eminence, who considered that any attempt to relieve her would be fruitless. The preparations I tried were a weak solution of Sulphate of Iron, which I desired her to keep constantly applied to the diseased parts, and

precipitated Carbonate of Iron, of which I desired her to take five grains three times a day.—With this advice she returned to Cork where she resided, and I did not again see her till near two years afterwards, when she came to Dublin for the purpose of putting herself under my care ; being greatly alarmed on account of a rapid advancement of her complaint which had evidently shaken her constitution to a great degree.

I found, on enquiry, that she neglected to follow my directions, except for a few months after her return home.

The induration at the time of her second application to me, May 1st, 1808, had extended high into the Axilla, and along the edge of the Pectoral muscle to the Breast, and adhered firmly to the Ribs; there were also several hard knots like welts running in every direction beyond the induration. The lancinating pains were frequent and severe. The Ulcer had extended considerbly—was of a black foul appearance, and its surface was completely insensible. Notwithstanding many of these unpromising appearances, I determined on trying the effects of the Arseniate of Iron, as the Carcinomatous substance, tho' of considerable extent, was not of a bulk which I thought precluded the hopes of recovery.

About a dram of the Arseniate was sprinkled on the surface of the Ulcer, which did not produce any uneasiness till half an hour after its application; it then caused a sense of heat and smarting in the part, which continued for three or four hours; but this was by no means a pain comparable in severity, with that produced by the application of the Oxide of Arsenic. An emollient poultice was applied the following day, which softened the surface of the Ulcer that was acted on by the powder.

On the 3d, as much of the Carcinomatous substance as was in a state of slough was removed by the knife or scissars, and the application was again renewed and repeated in general, every third day till the end of the month.—The intervening days a poultice was applied.—During this interval, as well as the entire of the time she remained under my care, she took daily from fifteen to thirty grains of the Sub-Oxy-phosphate of Iron; except on such days as it became necessary for her to take some opening Medicine, on account of a constipated state of the bowels, to which she was constitutionally subject—which unfortunately was not a little encreased by the Ferruginous preparation.

Under the above treatment considerable portions of the Carcinomatous substance were reduced to a state of slough, and were easily re-

moved; but in the beginning of June, the amendment was no longer progressive, the disease appeared stationary and little or no slough was produced by the Arseniate.

I now had recourse to the Sub-Oxy-phosphate, with which I filled up the cavity of the Ulcer.—I repeated this application for four or five days successively, and it became evident that under its use a large slough had formed, which by the use of opultices, with the assistance of scissars, was removed in three or four days.—I persevered for eight or ten days with this preparation, without that quick amendment which I expected—but I afterwards found that far greater benefit was derived in this case by alternating the application of the Arseniate with the Sub-Oxy-phosphate of Iron, than by any other mode which had been yet adopted; but as soon as a slough formed the application became unnecessary, and poultices were used until the slough could be easily separated.

By these means two large portions of the Carcinomatous substance were removed, one on the 8th, and the other on 16th of July.—In thickness and structure, these portions of the Cancerous mass bore a close resemblance to the strong capsular ligament of the Hip Joint, in firmness and tenacity of consistence.

In the month of August, an appearance of lassitude and general debility in the Patient, indicated that it would be dangerous to persevere in the Arseniate of Iron.—It was therefore laid aside, and it was not found necessary to resume it again.

After the separation of the sloughs, the Ulcer was greatly enlarged, and a portion of one of the Ribs left completely bare, but scarcely any induration remained. It was dressed every day with Oxy-phosphate of Iron, the application of which did not cause any pain; the discharge became thick and purulent; granulations sprouted forth, the Lips of the wound inclined inwards; the sore gradually diminished in size—and was completely healed in the beginning of October, five months after she confided herself to my care. She returned to Cork on the 10th of October, in a state of health, which she never expected to enjoy. But I thought it necessary that she should persevere in the use of the Ferruginous Medicine internally, and frequently to bathe the part affected with a lotion composed of one part of Acetate of Iron to two of water.

It may be of service to mention that at the latter end of September, when the sore was nearly healed; she was alarmingly affected with stupor, dizziness in her head, loss of memory, weakness in her limbs, and general fever. I was sent for

late at night to see her, and on enquiry, learned that her bowels had not been opened the last four days, during which time she continued to take half a dram of Sub-Oxy-phosphate of Iron daily.—I immediately ordered her a brisk Cathartic Medicine, in which electuary of scammony formed the principal ingredient; the Medicine operated frequently before morning, and effectually removed those serious symptoms of impending Apoplexy; she did not however completely recover her strength for ten days or a fortnight afterwards.—This serious attack affords an instructive lesson ccncerning the exhibition of Ferruginous Medicines, for when continued for a length of time in large doses, they tend exceedingly to confine the bowels. It is therefore necessary, that frequent enquiry should be made concerning their state, particularly in persons advanced in life, and predisposed to Apoplexy, in order that this danger may be obviated in time by opening Medicines.

## CASE XXI.

*Occult Cancer of the Breast.*

On the 8th of July, 1808, I was desired to see Mrs. B———, a Lady between 40 and 50 years of age; she was rather of a brown complexion, and had by no means the pallid hue of those predisposed to Cancer. There was a small irregular lump about the size of a wall-nut situated in the left Breast, just above the nipple, on which were several projecting points to which the Patient first called my attention.—Lancinating pains were at times severe, but in general were moderate, altho' their recurrence was frequent—She attributed the complaint to an injury she received three years before, shortly after which she observed the lump whose encrease bore no proportion to its long duration.

Under the use of Sub-Oxy-phosphate internally, and the diluted Acetate of Iron externally, the lancinating pains were soon entirely subdued.—A month after the commencement of the Ferruginous Medicines, the lump felt as if it

had divided into two parts—and its projecting points became less evident to the touch.

In the beginning of September, the external application produced an eruption on the Breast, and caused considerable uneasiness, during which time she frequently felt the lancinating pains that had lain so long dormant. It became necessary, in consequence, to intermit the external application for eight or ten days, but on reassuming its use she became daily better, and in two months was perfectly free from every symptom of the disease.

## CASE XXII.

*Cancer of the Nose and Cheek.*

CATHERINE CALLAGHAN, 40 years of age, servant to a Lady who resides in Cumberland Street, applied to me on the 10th of September, on account of an obstinate Ulcer, which she had for seven years on the Cheek and right side of her Nose.—It was covered by a thick brown crust, which was removed with difficulty, and had the other usual characteristic marks of Carcinoma in the Face. It began as a hard pimple or excrescence, and was attended afterwards with sharp lancinating pains.

I ordered her Oxy-phosphate of Iron made into a paste with water, which she was desired to apply to the Ulcer twice a day, and to take fifteen grains of the Carbonate of Iron three times a day. Under this treatment the Ulcer was completely healed in two months.

## CASE XXIII.

*Extensive Cancer of the Face.*

JOHN DALY, a Boy about 12 years of age, whose Face was miserably mutilated by Cancer, applied for admission at the Hospital of the House of Industry, on the 6th September, 1808. The disease had destroyed the entire of his Nose and right Eye, scarcely a vestige of either remaining; and still continued its ravages on the remainder of his Face, which was almost entirely covered by foul corroding Ulcers, or by thick brown crusts. On the removal of any of those crusts, which put him to great pain, Ulcers were also found underneath, of an irregular and foul appearance. Olive oil was frequently applied to his Face, for the purpose of softening the crusts, many of which were in consequence easily removed, so as to admit of the application of the Carbonate of Iron to the Ulcers. This preparation was first moistened with water, so as to bring it to the consistence of a thin paste, and he was also ordered to take ten grains of the same preparation three times a day.

The first appearance of the disease, the Boy said, was a small hard pimple or wart on the side of his Nose, near three years before; but as he mentioned that he had been in the county Hospital at Navan, under the care of Dr. Nelligan, I wrote to that Gentleman, requesting a history of the disease, which he has been so kind as to favour me with in the following reply:

" SIR,

" I would have acknowledged the receipt of " your favour sooner, but wished to ascertain " the exact time the Boy with the Cancer came " into this Hospital, which I find was in April, " 1807.

" I tried the usual means with him, and some- " times I thought the Cicuta was of service, " as the Ulcers seemed inclined to heal; but as his " relief was always temporary, and latterly he " grew worse, despairing of curing him, I " sent him to Dublin, and am happy to hear he " has had the very good fortune to get under " your care; and most sincerely hope the Me- " dicines you have given may prove efficacious, " not only on his account, but for the advan- " tage of mankind in general.

" The first time I go to town, I will take the " liberty of calling on you; and wish to know " the manner you treat a disease, which has " hitherto baffled the skill of the most eminent " amongst us.

" I have the honour to be your very

" Humble Servant,

" M. NELLIGAN."

*Navan, October 5th*, 1808.

Under the use of the Ferruginous Medicine above mentioned, a rapid and immediate amendment took place, many of the Ulcers healed in less than a fortnight, and the others put on a better appearance.—The same thick slimy tenacious discharge took place, which I have so often observed in Cancerous Ulcers, when under the application of Oxides of Iron. He was obliged to intermit the internal use of the Medicine from the 14th of September, to the 10th of October, on account of a complaint in his bowels, which at that period was very prevalent in Dublin; and the progress of his amendment was evidently retarded during this intermission. On the 14th of October, as he seemed not to be recovering as rapidly as before, I changed the external application for the Oxy-phosphate, which was applied in the same manner as the Carbonate. Under its use his

amendment was quicker. The Ulcers on the lower part of his Face and his Forehead had healed on the 30th of October ; and in a few days afterwards all the others had completely cicatrized, leaving him, however, to regret that the remedy had not been employed in time to prevent the dreadful deformity occasioned by the ravages of the disorder.

IT would be unnecessary and tiresome to detail a train of additional cases, scarcely differing in the slightest particular from many of the foregoing ; and tho' some cases at present under my care might interest the public, I shall refrain from giving them in an unfinished state, being fully convinced that those I have related, are amply sufficient to satisfy the most sceptical, of the efficacy of the preparations of Iron in this disease. But as a number of credible witnesses to a fact establishes more strongly its truth, I shall corroborate the testimony I have offered, by the evidence of some respectable names, whose correspondence will be as satisfactory to the public as it has been gratifying to me, from the accurate statements, and unequivocal proofs it contains on one of the most interesting subjects in Medicine.

## CASE XXIV.

*Cancer of the Face and Throat successfully treated with the preparations of Iron, accompanied by other Cases, whose results were various; in two letters from Dr. Du Gard, of Shrewsbury.*

*Shrewsbury, April 14th,* 1806.

" SIR,

" Having lately perused your publication on " Cancer with much satisfaction, and tried the " efficacy of the remedy therein recommended, " in this hitherto unconquerable malady, I mean " Cancerous Mammæ, and being assured that " any communication from the faculty on so in- " teresting a subject, must be received by an " Author of such liberality, with proper atten- " tion, I have taken the earliest opportunity of " acquainting you with the result of my at pre- " sent slight experience.

" I have at present two Breasts in a state of " open Cancer, and three in a scirrhous state, one " of the latter rather advanced, and two incipient.

" Four out of these five cases have certainly pro-
" ceeded from external injury ; I can gain no satis-
" factory account of the origin of the other,
" but imagine it to have proceeded from injury,
" as I conceive most, if not all of these cases do ;
" the Patient being a deformed woman, and oblig-
" ed to wear stiff stays to support her, the edges
" of which rested against the center of each
" Breast—and in both there is a tumour.

" The Lady in whose case I first commenced
" a trial of the Carbonas Ferri, had several small
" indurated tumours in the cicatrix, left after
" removing a Schirrus about two years ago ; and
" the skin around, to the circumference of nine
" inches, was diseased, with knotted cords lead-
" ing to a lump in the axilla ; this last adheres
" to the skin, but is moveable, together with its
" appendages. Two months ago a large Blister
" had formed upon the central tumours, the con-
" tents of which I frequently let out with a needle ;
" the matter was of an olive green colour, as
" transparent as Venice turpentine, and of a con-
" sistence somewhat thicker.—Probably the singu-
" lar appearance of the discharge, and its extreme
" mildness, might be attributed to an Atmosphere
" of Carbonic acid gas to which it had been con-
" stantly exposed from the middle of August,
" 1805, to the 9th of March, 1806 ; when I
" thought it expedient to apply the Carbonated
" Iron in a dry form, and to prescribe inter-

" nally, eight grains of it thrice a day in wafer " paper. 11th, I washed the diseased parts with " a lotion composed of eight ounces of water " and two drams of Sulphate of Iron; after " which the powder was laid over the whole.— " This plan was continued, and the dose increas- " ed to eleven grains three times a day, till the " 25th, when I removed the cuticle containing " the pus, and discovered an ulcerated surface " studded with many knuckle-like lumps, vary- " ing from the size of a large Horse-bean, to " that of a small pea—the whole was washed " with the lotion, which produced a little smart- " ing, it was soon allayed by covering it with " the powder—a cloth wet with it was applied " to the axilla. 26th There appeared a trifling " discharge, and a little blood oozed from several " parts of the sore; the powder was thickly laid " on. 27th, No discharge from the wound; it " was covered with a dry crust. 29th, The pulse " having increased to 96, accompanied with dry " fits of coughing, which she had in some de- " gree previous to taking the Iron, it was dis- " continued, and likewise the lotion which had " occasioned a good deal of smarting and itching. " April 1st, since leaving off the Iron, the parts " leading to the axilla are inflamed a little, the dry " crust still continues on the wound, the Patient " says it feels " pursed and tight, but scarcely " any other sensation in it," pulse 96. 3d, " The crust is cracked and very hard, I now re-

" moved as much of it as I found loose, and per-
" ceived a new cuticle had covered the sore.
" 9th—the cough, &c. having become more pain-
" ful since omitting the powder, she began again
" to take eight grains of the Medicine thrice a
" day, with the sixth part of a grain of powdered
" foxglove leaves. The integuments around the
" part were kept constantly wet with the lotion
" for several of the last days. There being no
" moisture on the surface, it was painted over
" with the Iron powder and water—the lotion
" having chopped and smarted the skin, it was
" discontinued, but a smarting and itching con-
" tinues to the date of this letter; owing, I
" think, to the scales of dead cuticle which are
" falling off—cream of lead nor any of the usual
" solutions of that metal allay it.

" The disease, as far as it was uncovered, does
" not discharge, while the coat of powder is un-
" disturbed—the tumours are all flattened, and
" at the line where the sound and diseased skin
" join, she complains of much tenderness and
" smarting. I have now began to apply cloths
" wetted with a lotion composed of two drams
" Ferr: ammon: in six ounces of water, to the
" axilla and those parts that are not uneasy.

" This Lady is of the melancholic temperament,
" æt: 52, very thin, and on the diseased side since

" the operation she has no Breast; the Cancer ad-
" heres to the pectoral muscle. She has never
" been healthy, but for the last twelve months
" had almost constantly a copious sediment in
" the urine; but four days after taking the
" Iron, it became quite transparent, and re-
" mained so, with the exception of one day,
" till the 30th, the day after which she discon-
" tinued it, and then alternately it was clear one
" day and clouded the next; it is now muddy
" every day as usual.

" The Lady whose case I have described, is a
" very particular friend of mine, and am there-
" fore the more anxious for your opinion and
" advice about her; and at the same time, I
" should be glad to hear what farther experience
" you have had of the Iron in Cancer, and whe-
" ther you have tried it in many cases of diseased
" Breasts.

" The other case of open Cancer is easier since
" using the powder, but is far advanced—the
" discharge is abating; this Lady is 72 years of
" age. I am not so sanguine about it as the one
" above related.

" I have not perceived any alteration in any
" of the other cases; indeed it has been tried but
" a very short time in any of them.

" What preparation have you found most ser-
" viceable to the integuments surrounding the
" disease ?

" The Carbonas ferri which I am using is preci-
" pitated from the Sulphate of Iron, by means of
" Soda.—Sulphate of Soda, which is formed in
" the process, being more easily washed from it,
" than Sulphate of potash, the salt formed when
" that alkali is used. Some of the Carbonated
" Iron which is kept in the shops is quite caustic,
" from the uncombined potash remaining in it,
" and all that I have been shewn contains some
" neutral salt.

" I have now only to subscribe myself with
" respect,

" Sir,

" Your most obedient Servant,

" THOMAS DU GARD."

*Shrewsbury, October 4th,* 1808.

" DEAR SIR,

" The two cases of Cancerous Breasts, which " I communicated to you in April 1806, termi- " nated fatally. For some weeks previous to their " dissolution the Patients had Asthma, and as far " as my observation goes, this is generally the " case in Cancer of the Breast. They were both " married women, but had never been pregnant. " The Lady who had applied Carbonic acid gas " to the part was always very thin, had the " Catamania very sparingly, and had considera- " ble disease of the Uterine organs, of a very " obscure nature, many years previous to the ap- " pearance of a tumour in the Breast. She was " 54 when she died. The other was the wife " of a Surgeon of eminence, who died at 70.— " Many other cases I have had under my care " since I wrote to you, and now have two, the " one open the other occult.

" Although I never have known the Iron pro- " duce a radical cure in open Cancer of the " Breast, *yet I have not witnessed an instance in* " *the course of my practice where it failed to produce*

" *ease and a small healthy discharge, to correct all*
" *fœtor and supersede the use of greasy and offensive*
" *applications ; so that the poor sufferer from a state*
" *of mental and bodily pain, became comfortable for*
" *the remainder of her life.*

" In that peculiar morbid affection of the
" Face, however, which is commonly termed
" Cancer, but which in my opinion is a distinct
" disease from Cancer, I have had many cases,
" and by *the Iron treatment have happily succeeded*
" *in curing all of them.*

" It would be both tiresome and useless to re-
" late the particulars of each individual case to
" you, but as you intend again to present the
" public with a new edition of your most valua-
" ble observations, I will relate two cases, which,
" should they be thought worthy, you may in-
" sert in your next edition, together with the
" other communications from me.

" The first case is that of Mrs. W———, of
" this town, a widow Lady, aged 71, with light
" hair * and eyes, who had enjoyed good health,
" and had borne five children. In the year 1801,
" she perceived an inflammation of the uvula,

* Mrs. W———'s hair, when she was young, was striped dark red, and flaxen, and so peculiar as to attract the notice of her medical friends and acquaintance.

" which increased, and spread to the tonsils and
" into the Nose; the uvula was removed by a
" Surgeon soon after it became diseased, and
" then the Nose and skin of the Face were affect-
" ed, and the disease spread till it terminated in
" what is commonly called a Cancer: corroding
" the integuments around, and extending to
" every part of the Face. When I was first
" consulted by her, the disease had committed
" great destrucion of the features and skin.—
" The Nose was nearly gone, the lower edge of
" what remained was in a line with the inferior
" edges of the orbits of the Eyes—the sore
" covered great part of the Face, had eaten its
" way to the Eyes, and endangered the dislodge-
" ment of them—extended along the lower jaw
" on both sides almost to the throat, and over
" most of the forehead; attended with constant
" uneasiness, offensiveness, and discharge. We
" laid aside all the applications she was then
" using, and the crusts which covered the sores,
" inclosing a very ichorous matter, were removed
" by bread and buttermilk poultice. The Car-
" bonated Iron, carefully prepared, and moist-
" ened with water to the consistence of thick
" oil paint, was then applied with a camel hair
" pencil, and repeated every twenty-four hours.
" In a few days the discharge became good, the
" odour was no longer perceptible, and she was
" much easier. In four or five days the crust
" which formed from the application and became

" troublesome, was removed by strips of linen
" spread with Diachylon, a little softened with
" olive oil, laid over it for twenty-four hours.

" This plan was pursued without any varia-
" tion except a change in the form of the Iron,
" till the whole was healed. The Phosphate of
" Iron was tried, and I thought it for some time
" more efficacious than the Carbonate.—She has
" been free from the complaint about twelve
" months, and has enjoyed good health.

" It was not a little curious to trace the route
" of this destructive malady—it began in the
" throat, and extended like wild-fire, after the
" excision of the uvula through the posterior
" nostril into the Nose, and then to the Face, till
" every part of the Cutis, to the root of the hairy
" scalp, had experienced its influence, except a
" small part on the Chin.

" Carbonate of Iron was taken internally for
" a considerable time—the skin on the arms,
" neck, and other parts of the body, often became
" covered with an eruption, in form of hard red,
" or somewhat livid lumps, of the bigness of
" split peas, which seemed to proceed from some
" disorder of the digestive organs, and which I
" have frequently observed in the latter stages of
" open Cancerous Breasts.

" The other Case is that of Mr. Heighway, a " respectable Farmer, who resides eight miles " from this town, with red hair, hazel eyes, and " florid complexion; he consulted me about his " throat, which had been sore and painful ex- " ternally for more than a month. The sore " was about an inch and a half wide, and ex- " tended across the throat from his right ear " over the Larynx, and continued on to the left " ear; when the crust was removed the naked " sore appeared as if the throat had been cut, " except that it had a pale ash-coloured surface, " with a thin unhealthy discharge.

" His father, " he told me," had the same com- " plaint of which he died—that it was a Cancer." " I adopted the Iron treatment here, and in " about three months he became perfectly well. " This person possessed a very good counter " tenor voice. and I was fearful that the Larynx " might have suffered from the inflammation " and general disease of the parts, but was agreea- " bly disappointed, for on his recovery he re- " turned to psalm-singing in his parish church as " well as ever. He has been well six months " and enjoys good health.

" I have found the Carbonate of Iron a useful " remedy in that troublesome eruption resem- " bling Tinea Capitis, which attacks the beard and

" hairy parts of the Face. How would Tinea " Capitis be affected by the application of it?

" The Carbonate should be very carefully pre- " pared by some one possessing Chemical know- " ledge; otherwise great pain will be the conse- " quence of its application, the Patient and Sur- " geon disappointed, and the remedy sink into " disuse. Chemists who prepare Medicines in " the large way scarcely ever send it out good, " some use potash to precipitate the Iron from " the Sulphate, others chalk; both very impro- " per. The country practitioners and Druggists " are sadly imposed on by many of them.

" I am Sir,

" Your most obedient Servant,

" THOMAS DU GARD."

## CASE XXV.

*Cancer of the Cheek and other Cases.—In an extract of a letter from Mr. Martin of Moate, dated May 25th*, 1806.

"MR. HUGHES, Assistant Surgeon to the "first Brigade of the Militia light infantry, "sent a Patient to me in February last, with a "Cancerous Ulcer of the Face.—In order that I "might observe the progress it made towards a "cure, under the use of Carbonate of Iron. "This Patient, a poor man aged about 60, had a "Cancer for several years, extending from the "upper part of the superior Maxilla, a consi-"derable way down the Cheek, and from its con-"tiguity to the left Eye, there was great inflam-"mation of that tender organ. The rust of "Iron, in pills of six grains was taken every "fourth hour for six or seven days, and an "ointment composed of equal weights of axunge "and Rust, applied to the Ulcer night and morn-"ing. Under this treatment, I feel the most "sincere satisfaction in informing you, that the "Ulcer is now cicatrized, and that this wretched

" Being is again able to assist his family. There " were two cases nearly similar to the above, " in which the same treatment had the same very " happy effect. The following case is at present " under cure; James Naughten, aged 64, ap- " plied to me the 25th of April, with an Ulcer " extending along the left side of the upper Lip, " with considerable induration and a large tu- " mour reaching down the Maxillary Glands. " I ordered six grains of the rust of Iron to be " taken four times a day, and an ointment of " equal weight of axunge and rust to be applied " to the Ulcer. He was also desired to apply to " the tumour by means of compresses, a lotion " composed of an ounce of Sulphate of Iron " dissolved in sixteen ounces of water. On the " 10th of May, the Ulcer had assumed an healing " appearance, several *white sloughs* had come " away, and the lancinating pains had entirely " ceased. As the Iron had no effect on his " stomach, I increased the quantity to a dram " in ten pills to be taken daily.

" 23d.—The Ulcer continued to mend; in " place of the ointment, rust finely levigated was " sprinkled on the sore."

In a subsequent letter which I received from Mr. Martin, he informed me that, " tho' the " amendment in James Naughtens case was " more rapid than he could possibly expect, yet

" that unfortunate man allowed a common Far-
" rier in a few days after the above date, to
" make a transverse incision of the Maxillary
" Glands, which in two days afterwards was
" followed by his death."

Mr. Martin concludes his statement by remarking, " that he is confident, had no inter-
" ference taken place, this case would have afford-
" ed one of the most *incontestable proofs* of the
" efficacy of Iron upon Cancerous Ulcers."

## CASE XXVI.

*Cancer of the under Lip.—In a letter from Doctor Alley,**

*Cove, Cork, May 5th,* 1808.

" My Dear Sir,

" In compliance with the request contained " in your letter of the 22d ult, I hasten to for- " ward to you the minutes of a case of Cancer " of the Lip, which my friend Mr. Todd, in- " formed you was successfully treated by me " with the Sulphate of Iron.

" MAURICE M'CARTY, aged 53, received " an injury in the under Lip, in December, 1805. " From that period to the June following, a " tumour gradually formed on it, which, at " length, became distressingly painful, and dis- " charged an offensive ichorous matter, the ac- " crimony of which affected the corresponding " portion of the upper Lip.

* Author of an Essay on a peculiar erruptive disease, arising from the Exhibition of Mercury.

" He applied to me on the 13th March 1807; " and, at that time, he felt severe lancinating pains " in the whole of the under Lip. which extend- " ed to the angles of the lower Jaw. The tu- " mour was then arrived to the size of a small " wallnut; and from the irregularity of its sur- " face, the fetor and acrimony of the discharge, " and the severity of the pain, I had no hesita- " tion in pronouncing it a true Cancer. My " Patient described, as very different, the pains " attending the occult and open states of the " tumour; comparing the former to the sensa- " tion of pricking as with needles; the latter " to that which arises from being severely bitten. " He said, those pains were by no means con- " stant, or uniformly distressing; sometimes " suffering but little uneasiness, at other times " enduring the most excruciating agony. At " the time I saw it first, the tumour was im- " moveable; but this, he observed, was not the " case at the commencement. It was then of a " dirty brown colour; the edges were hard and " uneven; and thick scales, which had the ap- " pearance of condensed ichor, frequently sepa- " rated from its center.

" A solution of the Sulphate of Iron in water, " in the proportion of a grain to an ounce, was " applied to the part; and he was directed to take " two grains of the same preparation morning " and evening, on a full stomach. This plan

" was continued till the 20th, when he took
" two grains more of the Medicine in the mid-
" dle of the day. At that time, however, it
" should be observed, the pain had greatly abat-
" ed, and the tumour was reduced in size. The
" fetor of the discharge besides, was much cor-
" rected, and the upper Lip was nearly healed.
" It would be tedious to detail each days appear-
" ances ; and it may, perhaps, be sufficient to re-
" mark, that my Patient was perfectly recovered,
" before the end of the fourth week.

" It is doubted by some, if the cases, in which
" the preparations of Iron have been success-
" ful, were truly Cancerous ; and, perhaps,
" the one, which I have endeavoured to re-
" late, may appear equally dubious. Of this I
" am satisfied—had any of the opposers of the
" efficacy of the preparations of Iron, in the
" treatment of Cancer, been consulted upon the
" case, an opinion similar to mine would have been
" delivered ; and I am happy, that my prejudices
" are never so strong, as to induce me to con-
" demn, without trial, a remedy, which has, at
" least, nothing to forbid its application.

" I remain, my dear Sir,

" very sincerely yours,

GEORGE ALLEY."

## CASE XXVII.

*Cancer of the Nose, and other cases.—In a letter from Dr. Maharg.*

*Carlow July* 16*th*, 1807.

" Sir,

" It would give me most sincere pleasure to " reply in a satisfactory manner to any inquiry " relative to the healing art; but, respecting the " preparations of Iron in Cancer, I cannot speak " so decisively as could be wished, because I " never *practise* Surgery, except in some unavoid- " able cases of Dispensary Patients. Among " these I perhaps was the first in this town to " propose the use of Iron in Cancers or bad " sores. In one case, there was an ugly, deep, " Ulceration of the apex and alæ nasi, of a Boy " about 15 years of age; the bottom of the sore " had an irregular, somewhat honey-combed ap- " pearance, and the edges raised and uneven. I " considered it as Cancer, saw it often, and ob- " served a gradual amendment during the ex- " ternal and internal use of the Carbonate of

" Iron; the Boy at length ceased to call on me,
" but I understand, from the Apothecary of our
" Dispensary, that the Ulcer was completely
" healed.

" In several Ulcers which, if not *Cancerous*,
" were at least, in my opinion, *mali moris*, I have
" prescribed the Carbonate of Iron in ointment,
" or a solution of the Sulphate, externally, and
" the Carbonate also internally. Some of the
" Patients were cured; some were relived; one
" received no benefit; and others never called
" on me a second time, so that I could not know
" the termination of their cases.

" Not having taken notes of these cases, I can
" only say generally, that I at presant feel a
" strong conviction of the efficacy of Iron in
" many cases of bad Ulcers, which I believe,
" would scarcely, *if at all*, yield to the hitherto
" usual treatment.

" I have no experience of Phosphate, or Oxy-
" phosphate of Iron, as we have not yet got either
" at our Dispensary.

" I have the honor to remain,

" SIR,

" Your obedient humble Servant,

" JOHN MAHARG."

## CASE XXVIII.

*Cancerous Ulcer of the Arm.—In letters from Dr. Reece, of London, and Mr. Allard, Surgeon, of Bristol.*

The following account of an extensive Cancerous Ulcer of the Arm, cured by the Oxyphosphate of Iron, under the management, of Mr. Allard, of Bristol, was communicated to me by Dr. Reece, who sent me the following extract of a letter written to him by Mr. Allard.

*August 6th*, 1807.

" I have succeeded in curing a case of very " extensive Ulceration of the upper and lower " Arm, nearly from the Deltoid Muscle to the " Wrist, which put on a Carcinomatous appear- " ance, and had been for a very long period un- " der Medical treatment. The usual remedies " having entirely failed, the Patient, a Gentleman " of this city, then consulted me. I directed " the preparations of Iron recommended by Mr. " Carmichael, in full doses internally, and the

" Ulcer to be dressed twice or thrice a day with " it. The Patient has now been perfectly well " upwards of four months."

Some time after this communication, I wrote to Mr. Allard, to request he would inform me of the particulars of the case, in order that I might, with his approbation insert it in the second edition of my Essay—I received the following in reply :

*College Green, Bristol, December* 17, 1807.

" SIR,

" I have to acknowledge the receipt of your " letter—you are at perfect liberty to insert the " case as communicated to you by Dr. Reece in " your next edition; I am sorry that I did not take " any minutes of it, that I might have been able " to communicate it to you more fully. The " Patient had been under Surgical Treatment " near two years, prior to his application to me, " which was for the *removal of the Limb.* I " have only to add, that I saw him yesterday, " and that his Arm continues perfectly well.

" I have tried the Oxy-phosphate of Iron in " several Cancerous cases, both in private prac- " tice and at the Bristol Infirmary, (to which " institution I have been many years Surgeon) " but the result has not been successful; they " were indeed, so far *advanced in disease*, that " not much good was expected from any remedy. " Should any favourable case occur, I shall not " fail to communicate it to you;

" And am Sir,

" Your humble Servant,

" ROBERT J. ALLARD."

## CASE XXIX.

*Cancer of the Nose.—In a letter from Mr. Thomas Kelly, Surgeon, of Drogheda.*

" SIR,

" When I had the pleasure of seeing you in " Dublin, you expressed a wish that I should " send you a statement of a case of Cancer, " which was successfully treated by the Carbo- " nate of Iron ; when I first saw it, I expressed " great doubts whether I should be able to effect " a cure or not, it being of so long a standing, " and knowing the disposition of the person to " be such as that he would not strictly adhere to " any restriction in *his manner* of living ; but in a " short time after the application, I was surprised " to see such a change in its appearance. It is with " pleasure that I transmit you this case, as there " were various remedies tried to cure it, before " he applied to me, without the least effect ; and " am happy to have it in my power to add this " instance, to the many numerous testimonials " in favour of your very valuable remedy, and " remain,

" Your very obedient humble Servant,

" THOMAS KELLY."

*Drogheda, August* 19*th*, 1808.

"MR. ———, aged 30, somewhat delicate in constitution, much addicted to the use of spirituous liquors and smoaking tobacco, called on me to examine a sore which he had on his Nose for upwards of seven months, which, during that time was excessively painful, with a slight burning heat. Some time after the appearance of the Ulcer, which he was informed was Cancer, he was induced, by the solicitations of his friends, to apply to a family of the name of Aylmer, who are much celebrated for the cure of it; they applied a plaster to it, which encreased his pain very much; from the flattering encomiums which have been passed on this plaster, and the many cures which he heard it effected, he was induced to continue its use 'till finding no benefit from it, he at length laid it aside.

On examining the sore, I found it of a dark red colour, with callous and elevated edges to the extent of half an inch square, discharging a thin Sanious fluid, and very painful to the touch. From the above mentioned appearances, I had not the least doubt of its being Cancerous, and I applied Carbonate of Iron over the entire sore, covering it with a piece of lint, and then a pledgit spread with Spermaceti Ointment. 26th, He expressed the utmost satisfaction from the ease which he received after the application; at this time no visible change could be perceived, but in a few days the dark red colour began to look clear, accompanied with a more healthy discharge; it was dressed once a day after the usual manner, and in a very short time was entirely healed."

## CASE XXX.

*Cancer of the Breast, and other Cases.—In a letter from Dr. Reece, of London.*

*May 30th*, 1808.

" SIR,

" I have given the Oxy-phosphate of Iron " an extensive trial in cases of Phagadenic " Ulcers, to which I could give no other name " than that of Cancer, and in every instance it has " fully answered. In my treatise on the Rhatany " root I have added concise directions for the " internal, and external uses of the Phosphate " and Oxy-phosphate of Iron, and have there " briefly noticed a distressing uterine affection, " which terminated favourably in the expulsion " of full three quarts of hydatids. When I first " examined the Patient, I considered her suffer- " ings to arise from incipient Cancer. There " was a slight enlargement, and very considerable

" induration of the Os Uteri, with a fœtid dis-
" charge. She is now perfectly well. Whene-
" ver she has any pain in the region of the
" Uterus, to which she has long been subject,
" she has always recourse to pills of the Oxy-
" phosphate of Iron, which she says, allays the
" pain immediately. Since the publication of
" my treatise on the Rhatany root, I have been
" consulted on a Cancerous Ulcer on the Breast;
" the Lady, aged 45, about eight years since had
" a schirrous tumour in the right Breast, ex-
" tirpated by a Surgeon in London. About
" four years afterwards, she was affected with
" acute pains in the Breast, the Cicatrix became
" at length very callous, and in a short time
" ulcerated. The Ulceration was for some time
" kept clean and stationary by the use of Arsenic.
" The Arsenic at length failed to produce any
" salutary effect. The Ulcer spread, the dis-
" charge became fœtid, the edges reflected and
" callous; in fact, it assumed every appearance
" of Cancer. In this state she applied to me. I
" directed the Phosphoric preparations of Iron,
" both externally and internally; after one months
" perseverance, she informed me that the Ulcer
" was nearly healed; that soon after using it, it
" became quiet; that the surface sloughed off,
" and was succeeded by healthy Granulations,
" and a purulent discharge. Her general health
" was much improved by the Oxy-phosphate of

" Iron. As the Ulcer was reduced to the cir-
" cumference of a pea, the last time I heard
" from her, I have no doubt but that it is by
" this time perfectly healed.

" I am, Sir,

" Your very humble Servant,

" R. REECE."

AS a conclusion to the list of successful cases, a few practical observations of a more general nature than could be attached to any individual case may be attended with some advantage; particularly as observations on the detail of facts they contain, may tend to overcome some prejudices, that it is necessary to do away. Cancerous Ulcers of the Face have been very generally designated Lupus, Noli me tangere, or Elephantiasis, which last term Mr. Pearson thinks is most appropriate, and many imagine that they are not of a truly cancerous nature; but I know of no rational ground for this opinion, except the consideration that they more frequently yield to remedies of an escharotic quality than Cancers in other situations; but we may very well grant this to be the case, without believing, in spite of

our reason that a complaint which produces the same train of symptoms in every situation, is essentially different in one place, from what it is in another.

In Cancers of the upper Lip, Nose, and Face, the Carcinomatous substance * is in general of trifling extent and diminutive bulk, and Ulceration is found to follow very quickly on the Cancerous induration. But in Cancers of the Breast and Uterus, the Carcinomatous mass often increases to a vast extent, and frequently without any Ulceration. Escharotics as Muriate of Mercury, nitrate of silver, and white oxide of Arsenic are therefore much more likely to be of service where they have little to act upon, than where there is a great bulk and extent of parts to be destroyed.

To satisfy ourselves that the disease when situated in the face, and of which I have given so many instances, is justly termed Cancer, let us only compare its origin, symptoms and appearances, with those of Cancer in the Breast, or other parts. In all the disease commences in the form of a minute tumour, the size of a pea, (which in the face often appears like a small wart) either spontaneously

* See Chap. iv. Sect. 1. for description of the Carcinomatous substance.

or from external violence; more instances of which, and in greater variety, the face is exposed to than other parts. I need only mention the irritation that happens in frequently shaving off a pimple, or in the foolish habit of picking the Nose. A small hard tumour is soon observed, succeeded by Ulceration, which takes place more quickly in the face than elsewhere, on account of the superior vascularity of the part. It is accompanied by a discharge thin and acrid, or consisting of the white glutinous matter, which is found in all Cancerous Ulcers, as soon as the Carcinomatous substance begins to slough. These Ulcers of the Face have also high edges, and are attended with lancinating pains, the characteristic mark of Cancer. In short, if we except a difference in the magnitude of the induration; I can see no distinction between this disease occurring in the Face, let us name it what we will, and a Cancer in the Breast or Uterus. Those who are still inclined to refuse the name of Cancer to such Ulcers of the Face as I have described, will at least allow that they are frequently rapid in their progress, and in their advanced stages commit the greatest ravages on the parts they infest; destroying the Bones, Cartilages and membrances of the Nose, and in their progress attacking and destroying the Palate, Throat, and even the Eyes. An example of these dreadful ravages in a Boy of 17, may be found in Case xxxv. yet the progress of whose disease

could have been readily arrested, by any of the preparations of Iron, and a compleat cure effected if they had been applied in the early stages of the disorder. I speak decidedly, because I am warranted in doing so, by the benefit I have always experienced by the timely application of these remedies in similar Ulcers. And when their use becomes more general, we may rationally hope that the number will be greatly lessened of unfortunate creatures, that every day shock us in the streets with mutilated features, and scarce a remnant of " the human face divine," the dreadful vestiges of this disorder.

I shall here relate, an instance of its natural progress, when no effectual remedy is applied—it is the case of an extern at the Hospital of the House of Industry, and occurred in the summer of 1805.

The Patient was a strong robust man, about 30 years of age, in whom the disease commenced on the right cheek, in the form of a small hard tumour, not larger than a split pea. In about two months after its first attack, Ulceration took place, and the part afterwards healed; but a number of small hard lumps similar to the first were formed in succession, each followed by Ulceration, which spontaneously healed, leaving a deep seam, or cicatrix behind. The disease in about six months after its first attack extended

in the same manner to the right Eye, which when he applied at the Hospital, was entirely destroyed, scarcely a vestige of it remaining. The Patient pointed out several of these little indurations on the right Cheek, which felt almost as hard, and as distinct to the touch as peas would have done, if placed under the skin, and were precisely similar to the small tumours that are often found in the neighbourhood of a Cancer of the Breast, when far advanced. These pea-like tumours by degrees, extended across the Nose to the left side of his Face. The progress of the Ulcer laid waste every feature, his left Eye was in time extinguished, his countenance was lost in a mass of corruption, and in this melancholy situation he ended his days.

A great variety of medicines had been tried, among which were different preparations of Mercury and Antimony, both internally, and externally exhibited; but the slightest benefit was never derived from their use. A recollection of the distinct and progressive generation of those small bodies, tended to strengthen the opinions I afterwards entertained of the independent life of Carcinoma, when I was led by that idea to try the Carbonate of Iron, in the case of Mary Hutchinson, whose disorder bore a strong resemblance to that I have just related.

Another erronious opinion is, that Cancer never makes its attacks before the age of Puberty; but I cannot discover on what grounds this notion is formed, as the appearances and symptoms of the disease, when it occurs in the Face, are the same at an early, as at a more advanced period of life. Probably this opinion may be owing to a consideration that there is no instance on record of a Cancer of the Breast, Uterus, or Testes, at an early age; and the conclusion was adopted, that every other part was equally exempted. But it does not require much penetration to discover why the female Breasts should not be liable to Cancer at a period when their rudiments are yet scarcely formed; and the Uterus and Testes, parts in the next degree most subject to the disease, may be said to be still less in a state of existence.

But as no description of these Ulcers as they occur in Children, is to be met with, I believe, in any author, it may not be amiss to give a short account of their general appearances.

The disease usually commences in the form of a small wart, or pimple on the Apex, Alæ Nasi, or upper Lip; this by frequent irritation and picking, degenerates into an Ulcer, covered by a dry crust. If this covering is removed, the Ulcer is found of an irregular figure, elevated edges,

and overspread with a white viscous discharge—the surrounding integuments to a considerable extent, are of a dusky red colour, and the Patient complains of frequent stings in the part. If the Ulcer is situated in the Nose, the entire of that organ becomes in general discoloured, and considerably swelled—an appearance that might lead the Surgeon to suppose, that the cartilages and bones were diseased, which however, is an occurrence too likely to succeed in the progress of the Ulceration.

These Ulcers are generally thought to be scrophulous, nor is the opinion relinquished, or the disease suspected to be of a more obstinate nature, till the Alæ, and Septum Nasi, or Lips, are destroyed by the disease. Many Practitioners however, rather than relinquish their prejudices would call it an anomalous Ulcer, or an Ulcer *Mali Moris*, but whether they annex any idea to these appellations is more than I am aware of. Histories illustrative of the progress and appearances in Children, have been given in cases, III. XIV. XVII. XXVII. XXIII. and XXXV.

The two latter cases afford instances of the dreadful ravages occasioned by these Ulcers, when their progress is not resisted, and which leave no doubt, that they are as inveterate in their nature as Cancer; and why they should be de-

nied an appellation to which every symptom, and appearance gives them a right, I leave to those to determine who are inclined to dispute the justice of their claim.

## SECTION II.

### *CASES OF CANCER ALLEVIATED BY THE PREPARATIONS OF IRON.*

### CASE XXXI.

*Cancerous Ulcer of the Leg.*

JOHN M'DONALD, aged 79, enfeebled as well by years as disease, had been long subject to cough, and difficulty of breathing, when he was attacked by an Ulcer on his Leg, for which, in August 1805, he applied to be admitted into the Hospital of the House of Industry.

The Ulcer, which was of two years standing, bore a most malignant appearance, and every characteristick of Cancer: on the 1st of September the rust of Iron was applied, but an habitual Diarrhæa was unfavourable to the exhibition of that Medicine internally, unless in the smallest quantities.

However, in a few days, the projecting edges of the Ulcer began to decline, and the pale ashy appearance of its surface, was changed by the growth of healthy granulations.

During its application, white sloughs came away, among which was a projecting gristly substance from the centre of the sore, that he mentioned, to have existed previous to Ulceration—on a section of this small body, a gelatinous texture was evident.

He continued daily to improve, the edges of the Ulcer being nearly level with the surface, in some parts it even exhibited the appearance of cicatrizing, and he scarcely ever complained of the shooting pains. But the application being intermitted during my absence for five or six days, I found on my return, that the Ulcer had nearly degenerated to its original malignity—however, by a renewal of the remedy, it soon resumed a more healthy appearance, and raised an expectation, that it would yield to the Medicine.

But about the middle of October—Cough Dyspnœa and Diarrhæa, attacked him all together and prevented the possibility of the internal exhibition of Iron. But the Ulcer as might be presumed becoming worse, I determined on the 1st of November, to introduce it by

friction, in the form of an ointment, which was rubbed upon the part of the Leg below the Ulcer: an amendment again took place and the lancinating pains entirely ceased; but worn out by age and his numerous complaints, he died early in November. On dissection, the Ulcer was found situated upon a thin sheet of the Carcinomatous substance, which extended in every direction about an inch and a half beyond the edges of the Ulcer. The Lungs were full of Tubercles and Vomicæ; some of the former were of considerable size, and upon a section appeared precisely of the same *structure as the Carcinomatous substance.* There was nothing remarkable in any other part of the body.

## CASE XXXII.

*Open Cancer of the Breast.*

MARY GOREY, placed under my care by Mr. Garnett, on the 19th of November, 1805, was 52 years of age, and though married, never had children; she had received a hurt in her left Breast, about eight years before; some time after which, she perceived a small hardness near the nipple, which became retracted, but these symptoms were not attended by the shooting pains, till six years afterwards, at which time they became very severe. She consulted several Surgeons who recommended extirpation; but she neglected their advice, and at the instance of a Female Friend, applied an Arsenical Plaister in September, 1805, which in three weeks detached a tumour about the size of a pigeon's egg together with the nipple; but the burning sensation occasioned by the application was almost more than she could endure. The lancinating pain still continued and considerable induration of the Breast. The Ulcer displayed no inclination to heal, and in this state I first

saw her, when I applied the levigated Carbonate of Iron, and directed her to take a pill containing six grains every fourth hour, and to moisten continually the integuments round the sore with a lotion composed of three drams of the Sulphate of Iron, dissolved in six ounces of water.

On the 21st of November the second day after, a crust was formed, and the shooting pains much easier, of which, on the 23d, short as the interval may seem, she ceased to complain—she persevered in her medicines, and the sore assumed the appearance of healing, until the 28th, when she left town, and I had not an opportunity of seeing her 'till the 15th of December. During her absence, she continued the powder and lotion until a hard cord, which she felt extending from her Breast to the Axilla, and described as a drag that hindered the free motion of her arm, was dissipated—upon which, and the Ulcer being healed, she discontinued her medicine, and so secure did she think herself, that I feared at the time she would not follow my advice, to persevere in its use; which notwithstanding the cicatrization of the Ulcer, and her freedom from pain and induration, I could not think an unnecessary precaution.

As it happened I was right—for in consequence of her negligence, a small hardness like

a welt, appeared about eight months afterwards on the Cicatrix of the former sore. Although this induration was observed above three years ago, it is at present so small that it might be covered by the point of the finger, and is not accompanied by any lancinating pains. I understand she occasionally applies to it a weak solution of Sulphate of Iron, which probably has prevented its increase, and she desires no more; for I believe she has no anxiety to be totally rid of it, as long as it affords her a means of exciting compassion, and a pretence for making a livelihood out of the benevolence of the public.

## CASE XXXIII.

*Cancer of the Uterus.*

On the first promulgation of the treatment of Cancer by the preparations of Iron, Dr. Breen had the kindness to place under my care, one of his Patients, who was afflicted with Cancer of the Uterus, and to furnish me with the following history of her disease.

" ELEANOR M'CLEAN, a widow, aged " about 47, applied for advice at the North " West Dispensary the 18th of April, 1805. Had " been affected from about the commencement " of the year, with constant pain in the small " of the back, attended with frequent shooting " pains about the hips, extending to the groins, " more particularly affecting the left hip and " groin. There was also a constant discharge " per vaginam, either of what she described as " a reddish fluid, or of a fluid similar to that " discharged in Leucorrhoea; they alternated " with each other, and were nearly equal in " duration. She also suffered much from pain in

" making water, and frequent desire to pass it. " Countenance languid and emaciated. On the " 31st of December, 1804, had a profuse dis- " charge of blood per vaginam, the Catamenia " had been absent for five years preceding, " this discharge continued for about three " weeks, and on its disappearance the symptoms " before described commenced. She has had " four children, her last about seventeen years " since. But for a great part of her life she " laboured under Leucorrhoea, which had left " her about a year before she was attacked with " her present illness. I ordered her the inspis- " sated juice of Cicuta made into pills. She " continued to use them, the dose being gradu- " ally increased, for about eight weeks; at " which period she went to the neighbourhood " of Sandymount, in order to use the tepid salt- " water baths, and remained there five weeks, " occasionally coming to town for advice. From " the time she left Dublin, as she evidently be- " came worse while using the Cicuta, I discon- " tinued its use, and from that to the month of " October, as I knew of no rational practice that " afforded hope of permanent relief, the only " plan pursued was the administration of Opium " to alleviate her sufferings, and Rhubarb and " sulphate of Potash to obviate costiveness.— " In October the pains becoming much more " violent, the discharge per vaginam very fœtid, " the red discharge having ceased for some time,

" the countenance quite cadaverous—and being
" sanctioned by the opinion of one or two Medi-
" cal Friends, that the exhibition of Arsenic was
" justifiable under the circumstances of the case,
" on the thirteenth of that month, she began
" the use of a solution of white oxide of Arsenic
" in distilled water ; from that to the seventeenth
" of November, she took about seven grains of
" the oxide. On that day, the Carbonate of
" Iron was given to her, and the Arsenical
" solution discontinued. While using the Ar-
" senic, the discharge became so acrid, that she
" thought it excoriated her thighs when it
" touched them. In that interval, according
" to her account, there passed several fleshy
" lumps, two of them in size nearly equal to the
" first two joints of the middle finger. During
" the time she used the solution, she conceived
" it to be of service, but this I rather attribute
" to the effects of imagination, as she seemed to
" derive much consolation from having a medi-
" cine exhibited to her, which she was informed
" was powerful in its operation, and might pos-
" sibly afford her relief.

" In the detail I give you, I merely mention
" the principal medicines she took, conceiving
" an account of the symptoms of her disease to
" be the great matter necessary for your enquiry.
" I therefore omit mentioning different direc-
" tions that were occasionally given, and some

" medicines administered that could have no
" material influence, either on her particular
" complaint or general health. I think it pro-
" per to add, that I examined the state of her
" Uterus per vaginam, shortly after her first
" application, and a second time in the begin-
" ning of October. On the first examination
" the Os Uteri had a particular hardened feel.
" I find it difficult to describe the peculiar sen-
" sation which it conveyed to the touch. At
" the second examination the feel of the Os
" Uteri was much the same, and that viscus in
" the interval seemed increased in size. Her
" Pulse throughout the whole time, to the best
" of my recollection, was about 120 and feeble.
" Her appetite bad.

" The state in which we found her, the day
" I committed her to your care, as well as the
" very great alleviation of her complaint that has
" since taken place, it is unnecessary for me to
" mention."

On the 17th of November, 1805, as mentioned above by Doctor Breen, I first saw her; all the symptoms he so accurately describes still continued, and from debility, and the frequency of the pain, she was unable to rise from her bed. A pill containing six grains of the Carbonate of Iron, was directed to be taken every sixth hour, which not disagreeing with her stomach, was on

the 19th ordered to be repeated every third hour.

On the 21st, she looked much better, had an easy night, was free from pain, and passed her urine with less difficulty, which did not deposit so thick a sediment; her pulse, which was before quick and weak, had become full and strong: she mentioned that about half an hour after taking a pill, the lancinating pains returned with increased violence, and that she several times experienced a fit of shivering.

As some of these symptoms were probably produced by the stimulating powers of the Iron, I interdicted the use of wine and solid animal food, and prescribed a milk and vegetable diet. The dose of her medicine was continued as before, and an injection frequently used, composed of two drams of Sulphate of Iron, dissolved in eight ounces of water.

On the 23d, the good effects of this treatment were evident, the pains being less severe, the pulse tranquil, the urine passed with more ease, and the distressing excoriation mentioned by Doctor Breen, hourly diminishing, the discharge formerly acrid and watery, having now become thick and ropy. She took her pills regularly, but the sensibility of the parts, for a time prevented the use of the injection. I did not

see her till the 26th, when she complained, that after I had seen her on the 23d, the pains returned and continued with great severity for several hours; but at length they left her, and she scarcely felt any uneasiness except what arose from a sense of weakness in her back, and the frequent desire of making water. She rested tolerably well, and sat upright without pain, which she could not do for the last six months. Her medicine was increased to ten grains every fourth hour.

On the 29th of November, her looks and general health had continued to improve,—the pains, which but seldom occurred, were scarcely marked by a lancinating sensation, and she was now able to quit her bed, and walk about her room; the increased dose, which had excited nausea was diminished to five grains every third hour, and an Enema composed of two drams of the Carbonate of Iron suspended in six ounces of starch was administered in the evening.

December 3.—Her strength daily increased, and her rest was undisturbed by any pain: The discharge from the Uterus and the consequent excoriation, were no longer apparent—so that she was enabled to use the injection, which was before discontinued, of the solution of Sulphate of Iron.

From the 6th, to the 14th of December, the internal use of Iron was interrupted by costiveness and griping pains, for which it was necessary to administer various Cathartick medicines. But as often as the state of her bowels would admit, the Enema already mentioned was repeated, with the addition of a dram of Tincture of Opium, that I hoped would relieve the frequent desire of making water, which had become more inconvenient than it was before her present course of medicine; but I am inclined to look upon this symptom as an effect produced by the tumours near the bladder, which being deprived of their vitality, gave the stimulus of an extraneous body, and excited, by their irritation the contraction of that viscus.

December 17th.—The constipated state of her bowels still continued, and would not admit of the internal use of the Iron, yet she had no return of the lancinating pains or excoriating discharge. A considerable number of small lumps had come away; some of them which she shewed me were of a gristly nature, and about the size of a bean.

December 24th.—She had not any evacuation, except by the use of strong Cathartic medicines, nor always then. The substances before mentinued still continued to be discharged in great numbers whenever she passed water; they were

of a black colour, owing, as I suppose, to the solution of vitriolated Iron, which was used eight or ten times a day. She was again ordered the pills of Carbonate of Iron to each of which was added one grain of Aloes.

December 30.—She took but two of the pills with Aloes, which purged her violently, altho' it had been hitherto difficult to move her bowels with large doses of Scammony and Calomel. She complained of a soreness in her throat, and difficulty of swallowing; upon examination, I found her mouth covered with Apthæ, and her tongue had the peculiar red appearance often observable in Scarlatina. She had no return of lancinating pains. I desired her to resume the Carbonate of Iron, six grains of which she was to take every fourth hour.

January 6th.—I found the Patient almost exhausted by an incessant vomiting, which she had since I last saw her; she was delirious, her tongue of a glossy red colour, and her pulse about 110—her bowels had not been opened for the last three days. She was ordered medicines, which stopped the vomiting, and her bowels were in a small degree opened by injections, but next day I found her completely comatose, and she expired that evening.

Her friends had no objection to have the body examined, and I was assisted in the dissection by Dr. Breen and Mr. Johnston, at that period assitants to the Lying-in Hospital Dublin.

Upon opening the cavity of the Abdomen, a convolution of the Ilium was found adhering to the bladder. When this was removed the Uterus was discovered to be enlarged and ulcerated, and its anterior part firmly adhering to the bladder, not by loose cellular connections, but by the extension of the Carcinomatous substance. Another portion of the Ilium adhered firmly to the fundus of the Uterus, and upon opening the intestine the cause of the adhesion, as well as the obstructed state of her bowels became apparent; for the Carcinomatous substance had extended from the Uterus into the very cavity of the Intestine, which it nearly filled, allowing a space only sufficient to admit a common quill, for the passage of the intestinal contents. The Colon, also, was tied down by two firm gristly bands, which proceeded from the left edge of the Uterus, and like ribands encircled that intestine.

The greater portion of the posterior part of the Uterus was destroyed by Ulceration, and in consequence a communication was opened with the cavity of the Abdomen, so that there was nothing to prevent the intestines from descending into the Uterus. The Psoas and Iliac muscles

appeared like a dark gangrened mass; the right Ovarium contained a fluid, and had the appearance of a large Hydatid; the left one was enlarged and scirrhous—in short, the entire contents of the Pelvis were more or less engaged in the disease. On a vertical section of the Uterus, its inner surface presented one extensive Ulcer, irregular and full of loose masses of a black colour, similar to those discharged per vaginam, and covered by a white tenacious matter. The Fundus was less affected by Ulceration, and a section of it exhibited the firm Carcinomatous substance, which was precisely similar to that I have seen in Cancers of the Breast and other parts.

When we consider this extensive mass of disease, so far from being disappointed at the failure of medicine, we can only be surprised that any remedy could afford even a temporary relief. But the alleviation in this hopeless case was far from trivial, when we reflect on the total cessation of the lancinating pains, which before scarcely allowed her an easy moment; and the improvement of her appetite and the increase of her strength, which was so great as to enable her, after a fortnights use of the medicines, to remain during the day out of bed; a circumstance which had not taken place for months previous to the exhibition of the preparations of Iron. As to the immediate cause of her death,

I ascribe it to the absorption of the great quantity of putrid matter contained within the Pelvis, not only on account of the symptoms which immediately preceded her demise, but because she did not suffer the slow lingering death, usual in cases of Cancer of the Uterus. May we not justly infer that the extensive sloughs were in a great measure, owing to the action of the Iron, upon the Carcinomatous substance; as under its use the characteristic pains of Cancer ceased, and at the same time quantities of the diseased mass, in a state of slough, came away in the discharge.

## CASE XXXIV.

*Cancerous Ulcer of the under Lip.*

ANDREW O'NEIL, aged about 30, who was sent to me by Mr. Dease, observed two years before, on his lower lip, a hard lump about the size of a bean, which gradually increased with frequent shooting pains, till it ulcerated towards the mouth; he was recommended by a friend to apply a plaster supposed to be of Arsenic, in consequence of which, it ulcerated externally.

I first saw him on the 22d of November 1805. A frightful Ulcer lay beneath the Lip, extending to the lower part of the Chin, and communicating with his mouth; the gum was also ulcerated and all the fore teeth were loose in their sockets. The lip was of a stony hardness, and the edges of this extensive Ulcer were high and turned back—he complained of the most violent pains shooting from the Ulcer to the back of his head, and the sub-maxillary glands were enlarged.

I filled the cavity with rust, over which I applied a pledget of lint, and retained all by a band-

age. Ten grains were ordered to be taken in the form of pills, every fourth hour.

On the next day I found that the pains had left him, but they returned on the 25th with intolerable severity; however on the following day they were in a great measure dissipated, and did not return till the 1st of December, from which time they continued violently shooting along his jaws towards the back of his neck, till the evening of the 2d; and on the 3d, he was so totally free from pain, that he enjoyed a better night's rest than he had done for a considerable time before: but finding on the 4th, that he was troubled with a difficulty of breathing and a severe cough, which complaints I attributed to the excitement of the Iron, to avoid the stimulation of grosser animal food, I desired him to live chiefly on milk and vegetables, and at this juncture, directed him to bathe his jaws frequently with a solution of Sulphate of Iron.

White sloughs came away at every dressing, the Ulcer appeared cleaner, and there was no pain of any kind till the 7th, when he complained of much soreness in the Ulcer, but not the lancinating pain which distracted him before; I was not then able to account for this symptom; but he acknowledged a few days afterwards that he was tampering with Arsenic, to which I not only attribute this soreness, but the frequent

hæmorrage of the Ulcer, both of which, for some time, continued to affect him.

December 11.—The Ulcer was more excavated and the communication with the mouth enlarged; but the hardness of his Lip and the surrounding edges of the sore much diminished; while the colour extending half an inch round the Ulcer was of a higher red, and resembled that of an inflammatory tumour. As his strength was reduced, and as the lancinating pains had not returned, I ordered him a soup and meat diet, and diminished the quantity of Iron taken internally, to five grains three times a day.

From this to the 18th, he continued free from every kind of pain, except the soreness already noticed; he slept well, had no return of his cough, his strength increased, the Ulcer still throwing out sloughs, and the redness extending more widely, when he was again attacked with the most insufferable pains; not however proceeding from the Ulcer, which was their former seat, but shooting from the maxillary glands at either side towards the back of his head; these pains were so severe that he could not bear them without crying out, and frequently fainted under their violence; on enquiry, I found that he had directed all his attention towards the Ulcer, and totally neglected to bathe his jaws and neck with the solution of Iron, according to my injuncti-

ons. I have studiously avoided the introduction of my theory into the history of those cases, but it would be unpardonable here not to notice the confirmation it receives from these symptoms. The vitality of the original Cancer seemed to have been destroyed, for the Ulcer which marked its situation, had no longer a cancerous appearance; but the roots it had distributed through the neighbouring parts, not being subjected to a local application of the medicine, still preserved their life, and might be sensibly felt like cords over the jaw bone towards the maxillary glands, and evidently occasioned all the tortures of the Patient.

I reiterated my injunctions with respect to the use of the lotion, and further prescribed an ointment composed of equal weights of Axunge and rust, to be well rubbed in to his neck and jaws; while he was to continue his pills, taking one every third hour, and two grains of Opium at night, to dispose him to rest.

On the 21st.—Cloths repeatedly dipped in a solution of two ounces of Sulphate of Iron in a pint of water, were for twelve hours constantly applied to his neck and jaws; by this treatment the pains were at length overcome, and he continued without any return of them as long as he remained under my care, which was only to the end of the month. He was then induced by

the solicitation of some of his friends, to apply to a man in the county of Meath, famous for the cure of Cancers, who promised with much sincerity, that he would either kill or cure him in three days; and he more than fulfilled his word, for poor O'Neil did not survive 48 hours after the application of a plaster to his Lip, which induced intolerable pain. The chief ingredient of this plaster, no doubt was Arsenic, and his very sudden death I am inclined to attribute to the absorption of that poison, from an extensive ulcerated surface, and to his swallowing a portion of it, which from the situation of the sore, it was almost impossible to avoid.

## CASE XXXV.

*Extensive Cancer of the Face.*

JAMES ROBINSON, 17 years of age, a creature condemned by the nature of his employment, that of a chimney-sweeper, to filth and disorder, was admitted in December 1806, into the Hospital of the House of Industry. He was one of the most miserable victims of this diease I ever beheld—his nose and upper Lip, the Nasal bones and palate-plates of the maxillary bones, with the teeth of the upper jaw, were entirely destroyed ; so that there was one great opening extending from the protuberance between the eyes to the lower jaw. The Carcinomatous substance which formed the walls of this extensive Ulcer folded back upon his cheeks, and concealed a considerable part of both eyes ; this substance as I have repeatedly demonstrated to the Pupils of the Hospital, might be irritated in any manner without producing any sensation in the Patient ; yet in other parts of the Ulcer there was a soft Fungus which was sensible and bled upon the slightest touch. The lancinating pains were

frequent, and darted towards the back of his head with great severity. The first commencement of the disease was a small wart situated upon the apex of the nose, first observed about sixteen months before, which by frequent picking was followed by Ulceration that gradually spread to the extent already mentioned. He had resorted to several of the charitable institutions of this city for relief, but every remedy applied seemed only to aggravate the disease. At the time he was admitted into the Hospital of the House of Industry the Ulcer had a foul greenish appearance. The Carbonate of Iron was tried as a Palliative only; for it would have been folly to expect more than temporary relief where such ravages had been produced. The medicine was also taken internally, and under its use an alleviation of pain soon took place, and a more healthy appearance of the Ulcer, with a discharge of thick purulent matter, and a diminution of the high everted edges which became nearly level with the surrounding parts. After he had remained in the Hospital about two months, having heard of a person that would cure him in a short time by the application of a plaster, he departed without acquainting any one of his intentions, and has not been since heard of. I relate this case not only to shew that in the advanced stage of Cancer, a great alleviation may be produced by the Carbonate of Iron; but also to refute a very prevailing opinion, that youth is exempt from

Cancerous complaints. In the present instance, no doubt could be entertained of the nature of the disease; but supposing it had been cured by any remedy before its ravages were so widely extended, there are many Practitioners to be found who would have no hesitation in confidently pronouncing that the disease was not Cancerous, under an idea that Cancer cannnot be cured except by extirpation, and that it never occurs in young subjects; but these opinions have been sufficiently refuted already.

## CASE XXXVI.

*Extensive Ulcerated Cancer of the Breast.*

In August 1806, I was desired to see Miss R———, a Lady between 40 and 50 years of age, possessing the peculiar paleness of countenance so characteristic of Cancer; the disease was at that time in its most advanced stage, a deep and frightful Ulcer, with elevated and everted edges, extending from the Axilla to the Sternum, and discharging a thin fœtid matter in such great abundance, that her bed cloathes were usually found moistened with it in the morning; the induration extended upwards as far as the Clavicle, and downwards upon the false ribs; it also filled the entire of the Axilla. Her strength was so reduced that she could not rise from her chair without assistance, and she particularly complained of the severity of the lancinating pains, which however she was accustomed to bear in silence; but their attack was always known to her friends by the sudden start or shuddering their violence excited. Besides these pains, she was never at ease on account of a scald-

ing sensation in her Breast, arising from the acrid discharge of this extensive Ulcer. Mr. M'Mullen, Apothecary, in Capel Street, occasionally visited her, and prescribed anodyne medicines in such doses as might afford her some relief; for several Surgeons of eminence, whom she had consulted long before I saw her, informed her friends of the hopeless nature of her disorder. I could not but concur in their opinion; yet without the slightest hopes of her recovery, I had little doubt that the pain would be much alleviated by sprinkling the Ulcer daily with a Chalybeate preparation.

On the 7th of August 1806, the Cavity of the Ulcer was nearly filled with Phosphate of Iron; over this was placed lint, and above all a pledget spread with some mild ointment. Two days afterwards she declared that the powder had so much relieved her, that she scarcely felt a pain; and distinguished her persent sensation as a slight stinging.

She was dressed in the same manner daily, till the 1st of September, without any return of the pains, and with an evident amendment in the appearance of the Ulcer, so that her friends began to entertain sanguine hopes of her recovery; but her strength was evidently declining on account of the profuseness of the discharge from the Ulcer, *the entire surface of which*

*betrayed no kind of feeling, on being cut or pricked to a considerable depth with a sharp instrument.*

At this period I fancied that the discharge might have been increased by the application of the powder: it was therefore laid aside for four or five days; but she herself begged that it might be resumed, for the pains were beginning to return with their usual violence, and the Ulcer again put on its former pale ashy colour. The powder was again resorted to, as I did not find that the discharge was diminished during its intermission, and on its resumption the pains again vanished. But her powers of life gradually declined; the Arm of the affected side became œdematous, and swelled to her fingers ends; a symptom which I witnessed sooner or later in every Cancer of the Breast, which terminated fatally—and on the 12th of September, without any return of the lancinating pains, she died.

## CASE XXXVII.

*Open Cancer of the Breast.*

BRIDGET NUGENT, about 40 years of age, with an extensive ulcerated Cancer of the right Breast, afforded a remarkable proof of the power which the Salts of Iron possess of alleviating the lancinating pains. This woman about nine months before her application to me, which was in August 1806, received a contusion on her Breast. Shortly afterwards her attention was attracted to the injured part by slight stinging pains, and upon a close examination she was able to perceive a small hard lump, or " kernel," as she termed it. The greater part of the Breast at the time she applied to me was remarkably scirrhous and discoloured; in the centre of the hardness was situated a deep Ulcer or cleft, into which the probe might be passed for several inches; and from this opening there was discharged a great quantity of thin fœtid matter. Tho' the scirrhous mass was perfectly moveable, yet there was a lump in the Axilla which was fixed and adhered to the integuments, which had a pursed

appearance, and were also discoloured; and the lancinating pains were so violent, that she could not suppress her cries, whenever they attacked her. It being Dr. Gahagan's month of attendance at the Dispensary, I requested him to observe with me the effects of the Phosphate of Iron, which was applied on the 1st of September, in such a manner as to fill the entire cavity of the Ulcer. The very next day, she declared that the pains were so much alleviated since the application, that she passed an easier night than she had done for many months before, and that she had slept soundly—a comfort which she had not lately enjoyed.

She was dressed with lint, as Dr. Gahagan wished to ascertain beyond a doubt, whether the alleviation of the pain, was owing to chance or the agency of the chalybeate; but the next day she complained that the shooting pains had returned with their usual violence. It would unnecessarily extend the statement of this case, were I to copy the notes I took each day; suffice it to say, that to determine the powers of the medicine, she was dressed three days successively with the Phosphate of Iron, and the next three with lint; that on such days as the powder was applied, the pains disappeared, and on the succeeding days they returned, beginning with a stinging sensation, and gradually increasing to their former severity.

This experiment was repeatedly made and always with the same result. During this treatment the discharge continued very profuse, and the appearance of the Ulcer varied considerably; for the pale ashy colour of the fungus which arose, became at first of a bright red, part of it changed to a dark liver-colour and then sloughed away.

When I perceived it approaching this state, I removed from time to time, as much with the knife as would not bleed upon cutting; and on each section, branches of the white Cancerous substance were apparent, ramifying through the liver-coloured fungus, now dead and beginning to separate. By these means, in about six weeks the scirrhous substance was diminished more than half. But the Patients strength began to decline, persperations at night, and a profuse discharge from the Ulcer, combining to reduce her. Yet her appetite (a circumstance not a little extraordinary) was voracious, and she had to her last hour, a continual craving for food; but at length worn out by the profuseness of the discharge, she died on the 6th of November.

## CASE XXXVIII.

*Cancer of the Uterus.*

On the 4th of May 1807, I was called upon to see Mrs. P———, a Lady about 40 years of age, afflicted with a Cancer of the Uterus, for which she had been attended by Dr. Tuke and Mr. Halahan, who considering the case as hopeless withdrew themselves from the attendance, some time previous to her application to me. She had been a long time subject to Leucorrhœa, and two years before first complained of a sense of weight about her loins, and lancinating pains which shot down her thighs, followed some months afterwards by a thin excoriating discharge from the Vagina.

Doctor Tuke informed me that the Os Uteri, and the greater part of the Vagina were of a scirrhous hardness, and that he supposed the disease had extended to the Rectum, as she complained of hard tumours in the part which she imagined to be hemorrhoidal. An habitual constipation of bowels rendered the aid of purga-

tives repeatedly necessary. She had taken a very great quantity of Cicuta, without any alleviation of her complaints; but her treatment at the time I was consulted seemed to be confined to the exhibition of opium, without which she never enjoyed any kind of rest or ease.

The discharge was considerable, and had in a remarkable degree the odour peculiar to Cancerous Ulcers, and her urine always deposited a thick sediment. I ordered her to take five grains of the precipitated Carbonate of Iron three times a day, and on the 7th, the dose was increased to ten grains. I did not see the Patient again till the 14th, and was truly surprised to find a very great improvement had already taken place, both with regard to her local complaints and general health: the latter I attributed in a great measure to her being enabled by her present course of medicine, to lay aside the use of opium altogether, which relieved her from the too frequent effects of that useful drug, head-ach and dyspepsia.

I now changed the preparation she was taking for Tartarized Iron, as I conceived it was less constipating to the bowels than the Carbonate; of this preparation she was ordered five grains three times a day, and I left her so easy with respect to her recovery, that the day she appointed for my next visit was a fortnight distant. But on

the 28th of May, I found my Patient very much altered for the worse; the pains had returned with much greater violence than before, and caused a sensation she said, " as if her sides were dragging asunder." The discharge was profuse and mixed with a number of small black lumps of the cancerous substance, and was altogether intolerably fœtid. She was much debilitated, had lost all appetite, and complained that the medicine was exceedingly nauseous, and had excited severe vomiting the first time she took it, and sickness every time afterwards. Surprised that such consequences should follow the exhibition of only five grains of Tartarized Iron, I examined some of the powder she had been taking, when with vexation and astonishment, I found it was Sulphate of Zinc.

Although I investigated this fatal mistake with great solicitude, I was never able to discover where the fault really lay. I am inclined to think the Apothecary was not to blame, but a clerk belonging to the company from whom he purchased the drug. However its pernicious effects, exercised on a debilitated frame for an entire fortnight, were but too evident at first view; and tho' she seemed afterwards to recover in some degree the promising condition she had attained before this unfortunate accident, its consequences were too mischievous to be ever retrieved.

To prevent the chance of any farther mistake I ordered again the Carbonate of Iron, three grains of which she was desired to take three times a day, as at the time, I feared from the weak state of her stomach, she could not bear a larger quantity.

On the 2d of June I again saw her; the severity of the pains about her loins, the profuseness of the discharge and great debility of her stomach and system, were in no wise alleviated. I changed the preparation she was taking for the Sub-Oxy-phosphate of Iron, that I had just received from London: five grains of this, she was directed to take three times a day, and to use frequently, by means of a syringe, an injection composed of as much Oxy-phosphate of Iron as could be suspended in water by means of mucilage. On the 10th the dose was increased to eight grains three times a day, on the 14th to fifteen grains, which from the 20th of June till the end of July was repeated four times a day; so that she took daily during this interval a dram of Sub-Oxy-phosphate of Iron, without its being productive of any inconvenience with regard either to her head or stomach. She also persevered in the use of the injection mentioned above, and went into a tepid salt water bath at temp: 94, twice or three times in the week. During this period the discharge rather increased, in which came away numerous decay-

ed substances; yet her strength, appetite and general health so far improved, that she was enabled to go out daily in a carriage for several hours, to enjoy the company of her friends, and to sleep soundly at night without once returning to the use of opium, her improvement in every respect being so rapid as to afford again sanguine hopes of her recovery. But our expectations in the beginning of August were grievously disappointed. At this period her appetite began to fail, and her tongue became white and furred, with other symptoms denoting that the primæ viæ were foul and loaded. A smart Cathartic was ordered, and she was desired to intermit for a time the Chalybeate pills. Her bowels were opened freely, but her appetite did not return; she continued much weaker and was soon fatigued by any kind of exertion, but still there was no return of the lancinating pains.

On the 4th of August, she was so extremely low, that her friends becoming alarmed requested my immediate attendance. I found her much debilitated, her countenance fallen, pulse very quick and small, great depression of spirits and frequent palpitations, and the discharge excessive, in which were passed in great abundance, large lumps of the substances before mentioned. These symptoms were followed on the next day by a profuse discharge of blood, which weakened and terrified her exceedingly. I directed the application of cloths dipped in cold

water and vinegar, and ordered her to take every third hour a draught containing thirty drops of Vitriolic acid in two ounces of rose water; by these means the effusion of blood soon ceased, and the next day, tho' she was extremely languid, her pulse was full and stronger. On the 7th, there had been no return of the hœmorrhage, but she was in other respects worse. Her pulse upwards of 100, tongue white and furred, and she nauseated every kind of food; the discharge had become more extensive and very offensive, with severe pain both before and after making water, and the lancinating pains had returned, but were not violent. I ordered her to take a little claret occasionally, and a cordial mixture with Ammonia. She was better on the 8th, but the following day was seized with a severe pain in the head, her eyes were suffused, and she could not bear the light or the slightest noise, her pulse strong and quick, with considerable thirst. On the 10th, the pain in her head was less, which was attributed to the operation of a cathartic, but her breathing at night became laborious and difficult; her pulse were so quick that they could scarcely be numbered, and in short every symptom portended approaching dissolution. Conceiving that this fever had arisen from an over portion of Iron being introduced into the system, and stimulating it to too violent actions, I resolved upon trying what effect the internal exhibition of some inflamma-

ble substance might have ; as it struck me that if it were possible to disoxigenate in any degree the Iron contained in the blood, and thereby diminish its stimulating properties, her present fever would be allayed. Camphor appeared to be that best adapted for the purpose, and I immediately ordered her a pill containing four grains of that medicine to be taken every third hour. On the very following morning the propriety of this treatment was evident in the diminution of her fever, the return of free respiration, and a more slow and regular action of the arteries. She persevered in this medicine for a week during which time, she was free from head ach and laborious breathing ; her stomach indeed was one day alarmingly affected, as it rejected every thing she swallowed, but the vomiting was quickly checked by tincture of Colomba.

On the 19th her strength was so far restored, that she was able to rise from her bed and to take animal food without inconvenience ; with a view to strengthen her stomach a bark mixture with Carbonate of Soda was ordered to be taken with lemon juice during effervescence. At this period I was called to see a Lady at Lurgan, in the North of Ireland, afflicted with the same disease, and consequently was absent five or six days, but on my return I was happy to find that Mrs. P. was greatly improved in her general health and appearance, her appetite was

tolerable, pulse regular, and her tongue moist and clean; she did not complain of any pain about her loins either fixed or lancinating, and the discharge was considerably diminished and of a thick consistence. This unlooked-for restoration after every ray of hope was extinguished, awakened once more the expectations of her family and friends, but I am sorry to add, that the sequel of her history affords only the usual melancholy detail that this malady has in almost every instance supplied.

Shortly after my return, she resumed the same chalybeate preparation, of which she took only twenty grains during the day; she remained till the middle of October with tolerable ease, occasionally using the Rhatania root in powder, as recommended by Doctor Reece, a medicine which I have found in this as well as other instances to be an agreeable and powerful Tonic.

The pains in November became more violent and frequent, resembling the pains of labour. The discharge was also profuse, containing a great number of pieces of the carcinomatous substance in a state of slough, and her distress was considerably increased by a severe pain, which regularly seized her after passing water. The Iron no longer produced any effect, and as she was evidently in a state in which the remotest hope of relief could not be derived from

any remedy, I ceased giving her any of the preparations of that metal; and until her death, she had no mitigation of her distressing pains, tho' stupified by large and repeated doses of opium.

Long before this case came under my care the disease was so far advanced, that the practitioners who had been attending her discontinued their visits, considering her case as hopeless. The alleviation of pain and extraordinary amendment which took place on the exhibition of the chalybeate medicines speak as highly in their favour as the most successful case, and if they were capable of effecting so great a change in the very advanced stage of the disease, what might they not have accomplished at an earlier period.

## CASE XXXIX.

*Open Cancer of the Breast.*

CATHERINE KIRWAN, was admitted on the 16th of June, 1807, into the Hospital of the House of Industry, on account of an ulcerated Cancer of the right Breast.

The Ulcer was of great extent, irregular and discharging in great abundance a fœtid sanies. The scirrhous mass in which the Ulcer was situated adhered firmly to the ribs, the lancinating pains were frequent and severe, and in short it was a case which precluded every hope of recovery. The disease had been rapid in its progress, as it was not more than seven months since she first observed a lump near the nipple, not larger than a hazel nut; but she had shooting pains in her Breast five or six months before, so that it is probable the hardness had commenced long before it attracted her attention. Ulceration followed in less than two months after the hard tumour was observed, and rapidly increased to a considerable extent. She lived three months after

her admission into the Hospital; during which period the Ulcer was daily sprinkled with Oxy-phosphate of Iron, which always excited great smarting for a couple of hours after its application. She also took the same preparation to the extent of half a dram in the day. Shortly after she commenced this course, the lancinating pains entirely ceased, and did not afterwards return. The Ulcer assumed a red and more healthy appearance, with a diminution of the high everted edges, and occasionally, in different parts of it, white sloughs were discharged; but she was weakened greatly by profuse perspirations, an effect which I ascribed to the Oxy-phosphate of Iron, as I observed it to take place in other instances of extensive Ulceration where that preparation was applied. Previous to her death she became hectic, complained of the most severe pain in the left thigh,* and the arm of the side affected, became Œdematous to the fingers ends; a symptom, which is in general, as it was in her case, soon followed by death.

* Many imagine that the pains which often occur in various parts of the body, in the latter stages of Cancer, are owing to a general contamination of the system by the Cancerous virus; but it may be demonstrated that no such cause exists—and it is well known, that pains resembling those of Rheumatism occur, where hectic fever arises from any cause whatsoever; a circumstance particularly remarked by Dr. Heberden, in his Medical Commentaries.

## CASE XL.

*Open Cancer of the Breast.*

MARY KELLY, a servant, 40 years of age, of a pale sallow complexion, applied to me about the beginning of October 1807, with a Cancer of the right Breast, the entire of which was engaged in the disease; it was considerably enlarged, of a stony hardness except at one or two places between the nipple and Axilla, where the integuments were discoloured, in which were two small openings, that discharged a thin fœtid matter. The integuments adhered firmly to the tumour, but this did not seem attached to the Pectoral muscle, and was perfectly moveable; there was a fulness in the Axilla leading from the Breast, but no induration could be perceived. She was a married woman, had two children, and always menstruated regularly. The disease was first observed about two years before, the origin of which was attributed to a hurt she received on her Breast in consequence of a fall; two months afterwards she noticed a small tumour not larger than a hazel nut, situ-

ated near the nipple, from which there proceeded frequent stinging pains. This tumour increased so rapidly, that on her consulting Mr. M'Evoy, a year after its commencement, he told her the disease had proceeded too far to admit of operation.

She had lately returned from England with her mistress, who informed me, that during her stay at Chichester, she had requested Mr. Gruggin, Surgeon of that place to visit her servant, and that he prescribed Chalybeate medicines, which had greatly alleviated the lancinating pains; but as she was about returning to Ireland advised her to apply to me.

From the great bulk and extent of the Carcinomatous substance, any expectation of a cure by medicine was beyond all hope, and extirpation by the knife was almost equally to be dispaired of, as the induration had greatly increased since the operation had been declined by the very eminent Surgeon I have mentioned a year before. Under these unpromising circumstances, still I could not but persuade myself that one chance remained of affording her relief; that after the extirpation of the great mass of the disease, or as much of it as we could safely reach with the knife, the sore might be dressed with some preparation of Iron, which would consequently come in contact, and exert its influence

upon whatever remained of the Carcinomatous substance. I mentioned this idea to Mr. Peile, who saw the Patient with me, and as it was indubitably the only chance which remained, he agreed with me that it was proper to give her the benefit of a trial, which would at least prolong her existence. The Patient having heard a fair statement of her situation, and our only hopes of affording her relief, consented after a few weeks to the operation; but in the mean time, the discharge had very much increased and was intolerably offensive. The lancinating pains were also augmented, and from these united causes, she was evidently sinking fast.

On the 8th of November the operation was performed; the entire of the diseased mass was included between two incisions, which extended from the Axilla to the Sternum, but the superior was of greater extent than that below the Breast, as it was necessary to include a large portion of diseased integuments which reached very near to the Clavicle; and this I conceived necessary as I had remarked that the failure of the operation in Cancerous Breasts, is frequently occasioned by a portion of diseased skin left behind, under an idea, that if the integuments are neither discoloured nor adhere to the tumour, they are free from disease. But there is an appearance indicative of this fact, which has not I believe been hitherto noticed—the

integuments feel thickened, somewhat resembling those of a white swelling of the knee joint, and on a close inspection there appear small streaks of a bright white colour, running thro' the skin ; these appearances I have observed in many cases of Cancer of the Breast, where the disease was far advanced.

The tumour having been dissected from below upwards from off the Pectoral muscle, a few fibres found adhering to the tumour were also taken away. While I was removing the diseased mass from the parts near the Axilla, I cut thro' a hard substance, which snapt under the knife, as if a tight tendinous cord had been cut across. I requested an assistant to keep his Eye on this divided part, until the Breast was removed. I then endeavoured to follow with my knife this Cancerous root, which went directly into the Axilla, and was as thick as the little finger. I separated it from the surrounding parts for some way, but finding it was in contact with the great vessels, and that I had laid bare the Axillary vein, which protruded like a large Varix from the bottom of the wound, I ventured no farther with the knife ; but by the advice of Mr. Piele passed a needle, armed with a double ligature thro' this substance, as far as it had been separated from the surrounding parts ; and I then tied the ligatures on each side with so much tightness as might cause the included part to slough off.

After one or two arteries were taken up, the lips of this extensive wound were brought towards each other as close as they would approach by straps of adhesive plaster. The wound at the first dressing, four days after the operation, had a black foul appearance, but on the eighth day suppuration was fully established. That part nearest the Axilla was covered with a white slough, evidently of the Carcinomatous substance ; at this place only the Oxy-phosphate of Iron was applied, as the remainder of the sore looked healthy.

On the 24th of November, 14 days after the operation, the white slough had separated, and the part underneath appeared healthy, as did also the remainder of the sore ; except near the Sternum, where it was of a deep red colour ; and the surface, in place of being uneven with Granulations, was perfectly smooth. Her appetite and strength were improving, but she frequently felt stinging pains in the Axilla. She was directed to take ten grains of the precipitated Carbonate of Iron three times a day, and that part of the sore next the Axilla was dressed daily with the Oxy-phosphate of Iron.

The 28th.—She was attacked with a violent pain in her side, immediately below the centre of the wound, which was so severe, that she breathed with much difficulty. I directed for her a

draught containing 40 drops of Antimonial wine, with 25 of tincture of opium, to bathe her feet, and to intermit the Chalybeate pills.

December 1st.—She had not perceived the stinging pains the last five days, and that part of the wound near the Axilla had a healing appearance, and the remainder was covered with healthy granulations. I introduced at each dressing Sub-Oxy-phosphate of Iron at that part where the ligatures which were put round the Carcinomatous root, hung from the wound, and by preventing it from closing rendered the introduction of the powder easy.

December 9th.—She was again seized with a severe pain in her right side with difficulty of breathing, which continued incessantly for four days, during which time the sore looked well, and appeared in a gradual state of amendment.

On the 12th.—She complained of the return of the stinging pains in the Axilla, and that the arm of the affected side was swelled, particularly about the elbow.

On the 16th.—I observed, in the most healthy looking part of the sore, a small button-like substance, rising from among the granulations, which had the hard cartilaginous consistence of Carcinoma. I now regretted that I did not dress

this part of the sore also with a preparation of Iron, a precaution I now found to have been necessary, notwithstanding its healthy appearance; however it was dressed that day with Sub-Oxy-phosphate of Iron, and by a perseverance in its use for six or eight days, this excrescence was no longer observable, and the entire sore at the same time was healing rapidly.

December 24th.—The sore was nearly healed; the only part remaining open, was at the Axilla where the ligatures still remained; into this opening the Sub-Oxy-phosphate was daily introduced. She felt occasionally slight stinging pains and the arm was somewhat swelled.

January 1st.—Ulceration again made its appearance, and was rapidly increasing in that part which had been healed, and where the Carcinomatous appearance was observed after the operation. It had already increased to the size of a crown piece, but when sprinkled with Sub-Oxy-phosphate of Iron, its progress was almost immediately checked, and by pursuing the same means it healed, except a very small spot, in twelve or fourteen days.

Her strength and appetite were so far improved that she was able to resume her occupation as a servant, and she continued till the middle of

March in such a state of amendment as to afford every hope that she would finally recover. About that time she was attacked with febrile symptoms, which were attributed to exposure to cold during severe weather. She complained of pain in her head, her tongue was white, her skin dry and parched, with much thirst. As these symptoms continued notwithstanding the usual remedies in such cases were exhibited, she was removed about ten days after their attack to St. Georges Fever Hospital, where she was placed under the care of the attending Physicians. Shortly after her admission into the Hospital she became delirious, and continued so till her death, which happened on the 29th of April. Dr. Toole who attended her the greater part of this time, considered her disease as Typhus Mitior, and did not conceive that it was symptomatic of, or arising from any local disease. She did not complain of pain in the Axilla, nor did her arm swell after her admission; but under the edge of the Pectoral Muscle near to the Axilla, the hardness became evident, and before her death was so considerable as to form a tumour about the size of a hen's egg.

I did not neglect the opportunity offered to me of examining her body. The tumour above mentioned was composed of the Carcinomatous substance, which in this instance was of a harder consistence than any I had

before observed. It was connected with bands or roots of the same substance, some of which ran into the Axilla, while others extended downwards, and a considerable layer was spread under the entire Cicatrix of the wound. But that which most attracted my attention, was the appearance of several of those roots as thick as the fore finger, passing between the ribs into the cavity of the Thorax; yet, altho' they projected into the cavity, they did not pass into the lungs, which adhered by loose connections to the costal Pleuræ. One of these Carcinomatous roots passed between the ribs very near to the Diaphragm, evincing in the strongest manner how unlikely it is that any medicine or operation can extirpate the disease in its later stages when it diffuses itself so widely among the neighbouring parts. The surface of both lungs was rough with Tubercles—those of the right were the larger; on cutting out some of them which were of an irregular figure, but nearly the size of a bean, and comparing their structure with that of the Carcinomatous tumour situated without the Thorax, no difference was observable. It is necessary to mention an extraordinary fact, that notwithstanding the diseased state of the lungs, and tho' she was affected with stitches and flying pains in her Chest, she was not troubled with the slightest cough—this circumstance is interesting, as it proves to what an extent

disease may exist in those organs without inconvenience to the Patient—and it appears to me not improbable, that cough and the other symptoms of Phthisis, arising from Tubercles, do not set in, till some change has taken place in those bodies, which may induce an effort of the sound parts to throw them off, thro' the medium of suppuration; thus Vomicæ are formed with consequent hectic and expectoration of matter.

## CASE XLI.

*Relapsed Caneer after Excision of the Breast.*

Mrs. D———, about 30 years of age, had undergone an operation for the removal of an occult Cancer of her left Breast; but the disease again made its appearance almost before the wound had cicatrized, altho' Mr. Richards who performed the operation, assisted by the late Mr. M'Evoy, used every precaution in removing the entire glandular substance of the Breast, and every part which bore the slightest appearance of being engaged in the disease.

On the 4th June 1807, six months after the operation, I was called upon to see her. At this time the disease had proceeded to so great an extent, as to preclude the most distant hope of recovery. The parts along the entire line of the cicatrix, which extended from the Axilla to the Sternum, were indurated and discoloured. The induration was of greater bulk above the wound, reaching nearly to the Clavicle, and firmly fixed to the ribs beneath. In different parts of the

cicatrix, several clefts or openings discharged in great abundance a thin acrid matter; and the integuments in the neighbourhood were marked by dark red streaks and knots of the indurated substance. Lancinating pains were frequent and severe, but she complained more of a constant burning sensation, which scarcely allowed her a moments ease. Opium procured her some little relief, of which she took four grains or more every night; and she had been applying, according to the directions of her medical attendants, before I saw her, a solution of Sulphate of Iron; which however excited so much pain that she was enabled to give it but a very short trial. On account of the great sensibility of the parts, tho' there was but little Ulceration, I perceived it would be in vain to attempt a perseverance with any of the salts of Iron in the form of a solution; the local application of the remedy was therefore inconsiderable, as I was enabled to introduce but a very small quantity of the Oxy-phosphate of Iron into the small openings in the line of the Cicatrix. However she took the medicine inwardly in large doses, first beginning with 15 grains of the Oxy-phosphate made into pills in the course of the day, and gradually increasing the quantity to 60 grains; which she continued to take from the 18th of June for a considerable time. The pains were greatly alleviated during this period, and she enjoyed comparatively greater ease than she had for a long time before, which

could only be attributed to the internal use of the remedy, another effect of which was observed by the Patient herself; she told me that shortly after the operation, she often remarked red knotted streaks under the skin, in the neighbourhood of the Cicatrix, which extended in the morning, visibly farther than their limits the preceding evening—a circumstance that accurately informed her of the progress of the disease. But after she began to take the Oxy-phosphate of Iron, the progress of these knotted streaks, not only stopped, but many of them entirely disappeared; an occurrence which gave birth to hopes, that were beyond the power of medicine to realize.

On the 2d of July, she was desired to take with each dose of the Oxy-phosphate, 5 drops of the tincture of Phosphorated Iron, but from her anxiety to hasten her recovery, she unfortunately took considerably more of the latter medicine than she was directed, which induced such an irritable state of stomach, attended with great debilty, that it became necessary to intermit the Chalybeates for a few days.

On the 8th.—She again resumed the medicine, but took in place of the former preparations, 20 grains of the Sub-Oxy-phosphate of Iron, three times a day. About the middle of July, Ulceration had extended along the entire Cica-

trix, attended with a considerable discharge of thin acrid matter. In the beginning of August the part became so irritable that she could not bear the application I have mentioned of Ferruginous powder, but poultices of bread and milk, hemlock and carrots were successively used: each afforded some relief on its first trial, yet in a few days she complained that they all in their turn excited pain.

There seemed now an end of the alleviation, she had hitherto enjoyed, since she began the use of the Ferruginous medicine—the Ulceration and discharge increased, her appetite entirely failed, and she became completely hectic. In the September following, she was afflicted with severe pain in her side, attended with cough and difficulty of breathing. Dr. Gahagan, who attended her with me, observed that the urgency of these symptoms and the state of her pulse were sufficient to authorize the abstraction of blood, if it was not contra-indicated by her diminished powers of life. These symptoms are however sufficient to satisfy us, that the lungs were diseased—a circumstance which I had frequently other opportunities of ascertaining in persons afflicted with Cancer.

The day before her death she told me that she was conscious she had not much longer to remain, and that while she was yet able, she wished to

assure me, that she had experienced by the medicines she had taken, great relief from the pains which accompanied her disorder, and that had those means been timely adopted which had alleviated her unhappy condition, she believed the event would have been very different from that which now awaited her.

I CANNOT conclude this series of cases without repeating an observation that must strike every person that peruses them—that if the preparations of Iron had been applied in their early stages, there is scarce one that would not have terminated successfully—and that these remedies must be a valuable addition to medicine, even if they should accomplish nothing more than is detailed in this class of cases, in which, tho' they did not preserve the Patients life, they extended his days beyond the limits his inexorable disorder would otherwise have assigned him, and for the most part procured some little ease to his last moments, which without this relief would have been devoted to such torture as no other malady inflicts, and which till now was without alleviation, notwithstanding the antiquity of the science of medicine.

## SECTION III.

### *CASES OF CANCER UNALLEVIATED BY THE PREPARATIONS OF IRON.*

### CASE XLII.

*Occult Cancer of both Breasts.*

In this and the two or three cases immediately following, the attack was sudden, the increase rapid, and the extent which the Carcinomatous substance arrived at before death took place, truly astonishing. The Patients countenance in such instances as the present, is always of a deadly paleness, rather inclining to a livid hue, and medicine has but little effect, either in retarding the progress of the malady, or in ameliorating the unhappy condition of the Patient. I shall not therefore take up the time of my readers in relating any attempt which was made with the view of affording relief, but briefly state the history of those cases.

Miss N———, an unmarried Lady, about 35, consulted me on the 10th of March, 1806. Her countenance was of a death-like paleness, which we can scarcely attribute to the attack of Cancer, as her friends informed me it was her natural colour. But this remarkable paleness, and the predisposition of the body to the formation of Cancer are evidently owing to the same cause.

Her entire right Breast was engaged in the disease, it felt as if there was a hard horney substance beneath the skin, which adhered firmly to the ribs, and also to the integuments. The nipple was retracted and the axillary glands were enlarged. There was no appearance which could indicate that Ulceration was about to take place, as the skin was of a light colour resembling that of a white swelling of the knee joint, and on a close inspection, but more particularly with a magnifying glass, appeared to be streaked with lines of a brighter white than the usual appearance of the skin.

The disease had only commenced three months before, the first symptom of which was a hardness situated between the nipple and Axilla. For three weeks it excited no uneasiness, and appeared to be stationary, but after that, severe lancinating pains attacked her, with a constant burning pain in the Breast, and the tumour increased with great rapidity. She never

recollected having received any hurt, and had always menstruated regularly. The pains were greatly alleviated for about ten days by the preparations of Iron, externally and internally administered, but afterwards they did not appear to have the smallest effect.

The arm of the affected side soon became Œdematous, which was preceded by numbness of her fingers, and an uneasy sensation of tightness down the limb. The Breast increased rapidly in size, so that the integuments appeared to be distended to their fullest extent, and the superficial veins had become enlarged and varicose. In the beginning of April the other Breast became suddenly affected, and the induration of it increased with so great rapidity that the entire Breast seemed to be engaged all at once in the disease. Her breathing now became oppressed and laborious with a sensation of an insupportable weight pressing upon her chest. The Carcinomatous induration extended from the right Breast above the clavicle, and under her arm along the ribs to her back. Before her death the skin of the Breast became red, vesicles formed upon it, and part of it sloughed away; but the hardness of the Carcinomatous substance remained undiminished, nor was there any appearance of Ulceration likely to take place. Exhausted by uncommon sufferings, she died in the beginning of May, about five months from the commencement of the disease.

## CASE XLIII.

*Occult Cancer of the Breasts.*

The next instance which occurred to me of the sudden attack, and rapid increase of Cancer is similar in almost every respect to that I have just related. The subject of the disease was, Mrs. C ———, a Lady between 50 and 60 years of age, whom I was called upon to see in consultation with Mr. Richards on the 27th of July 1807. Her entire left Breast was diseased, hard and firm to the feel, and adhering to the ribs; the Axilla was also affected; the skin of the Breast had the appearance mentioned in the last case, with the addition of many livid lines with which it was streaked. The pain she felt was neither shooting or lancinating, but she described it as if something was "dragging at her Breast." I was surprised to hear that this extensive Cancer had commenced only nine weeks before, but it was attributed to a severe hurt on her Breast. This Lady was married, and had several children, but was always of a delicate constitution, with little or no appetite for animal

food. She was of so pallid a countenance, that she appeared as if there was a total want of red particles in her blood, a remark which was made by Mr. Richards, who said that so far my theory of the disease seemed to agree with fact. The induration extended with rapidity in every direction. Upwards, it rose on her neck considerably above the clavicle, and a chain of hard knots reached even to the lower jaw. It spread under the Axilla, over part of her back, where it could be felt touching the lower angle of the Scapula. The incumbrance of this great mass of disease excited much uneasiness, and a pain across her back, which she herself attributed to the weight of her Breast.

There was no part of this extensive Carcinoma soft to the feel, or indicating a fluid underneath, nor was there exhibited any appearance of Ulceration about to take place. The arm became so Œdematous that the skin was puffed up like a bladder, and this distention was another great source of uneasiness. The other Breast became suddenly affected, and in the self-same manner as in the case last related; but tho' it rapidly increased it did not arrive at so great a bulk, as the Breast first affected. In this Breast the veins were enlarged and varicose, and on different parts of its surface, there were hard knots of a red colour larger than peas.

Before her death, she had Dyspnœa and cough, with expectoration of purulent matter. These symptoms I have observed to take place in almost every case of the Breast which has terminated fatally, and from several dissections I am inclined to imagine that in every such instance the Lungs are affected with Tubercles.

Whether the Ferruginous preparations, which she took to the last, had any effect in alleviating the pains, it is impossible to determine; her chief uneasiness seemed to arise from the weight of the tumour and distention of the integuments, and very little from the lancinating, or other characteristic pains of Cancer.

Before I saw her she had been taking, by the advice of Mr. Richards, the precipitated Carbonate of Iron; she afterwards took the Sub-Oxyphosphate, and the Phosphorated Tincture of Iron—the latter was suggested to me by Mr. Reece, of Henrietta Street, Covent Garden, by whom it is prepared. I have given it in doses of from five to twenty drops, three times a day, and have every reason to think it will be found a useful remedy, not only in Cancer but in many diseases, where a powerful stimulating corroborative is indicated.

The rapidity of the disease in this case is truly surprising, as she did not survive its attack more than four months.

In another part of this work, these circumstances will enable me to draw some conclusions on the nature and cause of Cancer; but I shall at present only point the readers attention to the extraordinary bulk the Carcinomatous mass in these two cases arrived at, without Ulceration or sloughing—the livid paleness of the Patients countenance, and rapid increase of the disease.

Justamond is the only Author I have met with, who notices this sudden attack and rapid increase of Cancer, and as his description completely answers to the history of the two cases I have just related, I shall quote it for the advantage of his remarks.

"There is a species of Schirrus, he observes, "which seems not sufficiently distinguished by "writers on this subject, and may be well stiled "the true occult Cancer; is more malignant "in its nature, more terrible in its effects, more "rapid in its progress, and more certainly fatal "than any other. Whether it may differ in its "nature from other Cancers I cannot tell, but I "rather imagine that its peculiar malignancy "arises from its seizing upon a large portion of "the animal machine at once, and not advanc-"ing by slow degrees, and from almost imper-"ceptible beginnings, as the more frequent in-"dolent schirrus or creeping Cancer does. "One of the distinguishing marks, indeed, of

" this disease, is the whole substance of the " Breast being suddenly attacked with a stony " and almost immoveable hardnesss. The dis- " ease is sometimes confined to this part at first, " sometimes extends to the arm-pit, the neigh- " bouring ribs, the clavicle itself, and the glands " of the neck. The pain of the disease is exqui- " site, scarce to be moderated by the most pow- " erful opiates, and the Patients describe it as " the constant gnawing of dogs."

" Even the operation, though practiced at the " most early period, and before the disease ap- " peared to have extended itself beyond the " part, has never succeeded in these cases to my " knowledge. The fate of the Patient, indeed, " is in general soon decided. From six weeks " to two or three months, or at most six, are " generally the limits of it."

## CASE XLIV.

*Cancer of the Face.*

The following case, affords another instance of the rapid increase, and great bulk which the Carcinomatous substance may arrive at; but this increase did not seem to depend, as in the two instances just related upon that state of the body connected with a difficiency of the colouring matter of the blood, as the Patient did not at all possess that peculiar paleness of countenance observable in the two last cases. Here it seemed to be owing to an unsuccessful attempt at extirpation, which left as many Cancerous germs as there were sections of its branching roots.

The subject of this disease, John Conway, aged 68, was admitted into the Hospital of the House of Industry in July, 1807. The left eye with its lids formed a tumour the size of a hen's egg, protruding from the orbit; the Parotid

gland of the same side was also greatly enlarged, and distorted the countenance, by drawing the mouth downwards. The disease had commenced about five months before on the edge of the upper eye-lid, where a small tumour was observed not larger than a pea; it produced no uneasiness except of mind, and in a state of alarm, he went to a Surgeon, who endeavoured by the knife to extirpate the tumour. Shortly afterwards he found that the disease was not eradicated, for the cicatrix grew hard, and the induration rapidly extended to the eye. The tumour of that organ about the middle of August had increased to so great a size as to protrude beyond the orbit, covering the entire temple of the left side, and extending a considerable way down the cheek; and in the centre Ulceration had taken place, from which was discharged, a thin ichor mixed with blood. The tumour that formed at the Parotid gland had extended also in every direction—increasing upwards, it united to that which protruded from the orbit, so that the entire cheek became one great indurated mass, which distorted the countenance in a dreadful manner. Downwards the induration extended so far, as nearly to reach the clavicle; and the integuments of the neck covering it, were marked by a dark red colour. He was at times deranged, and I have no doubt that it was occasioned by the extension of the Carcinoma-

tous substance so far as to affect the brain, which was found to be the case in another Patient, whose dissection I shall mention in its place. But this mans friends removed him from the Hospital a short time before his death, and I had not an opportunity of ascertaining this circumstance.

## CASE XLV.

*Cancer of the Face.*

In March 1807, a most deplorable victim of this disease, was particularly recommended to my attention, by the Rev. Mr. Parsons, of Parsonstown, thro' whose active benevolence he was conveyed to Dublin, from the King's county, where he resided. There was one continued Ulcer from the right eye, extending a considerable way down his neck, which had entirely destroyed the cheek, and lower maxilla; consequently he could scarcely articulate so as to be understood. He seemed to be also in some degree deranged, and it was with no small difficulty, I learned the disease commenced about two years before in the under lip, and that an unsuccessful attempt to extirpate it by a Farrier in the country, only encreased the malady.

The scirrhous hardness could be felt in all directions considerably beyond the Ulcer, but particularly upon the neck, along which it extended

very near to the clavicle with a discolouration of the integuments.

He lived after his admission into the Hospital about six weeks, during which time the Ulcer was dressed with Oxy-phosphate of Iron, with the effect of rendering it clean and of a red colour.

After having on many occasions, left no room to doubt his derangement of intellects, he died on the 2d of May, and on the following day, I examined in presence of the Pupils of the Hospital, the diseased parts, having previously injected the Carotids with fine injection.

The Carcinomatous substance was found to extend in all directions beyond the Ulceration—downwards, it reached to the clavicle, backwards to the posterior part of the ear, and upwards it enveloped the eye-lid, taking the course of the margin of the orbit. The entire angle of the lower jaw, and great part of its body was destroyed; but the offensiveness of the Ulcer rendered it impossible to trace the Carcinomatous substance towards the basis of the scull. However there could be no doubt, but that the bones alone prevented its penetrating even to the brain; for upon raising the scull-cap and examining the lower surface of the Cerebrum, a great portion of the middle lobes where they lie upon the bone, was almost dissolved to the state of a fluid of a

blue colour, and remarkably offensive to the smell; and the bone upon which they lay was so diseased and softened, that a probe was run thro' it in several parts without difficulty. The orbitar processes of the Frontal bone, and the greater part of the Temporal and Sphenoidal bones, seemed also diseased, for they were of a yellow colour and their Dura Mater was detached.

Upon opening the lateral ventricles the plexus Choroides appeared as if filled with Hydatids, which were about the size of peas, and contained a transparent liquor.

Large trunks of arteries were seen passing thro' the Carcinomatous substance, in which no *ramifications* were observable, altho' they were *numerous*, and filled with the injection in the *surrounding parts.*

I was disappointed in my intention of examining the state of the lungs, as I intended on the following day, the body having been interred in the interval.

This case is interesting, as it proves the great extent to which the disease may proceed, before death is induced, and teaches us that every remedy must be unavailing, in the very advanced stages of Cancer. The manner also in which the bones

were affected, deserves notice; they were not changed into the Carcinomatous substance, but were softened and rendered gritty, and it is evident presented a bar to the progress of the Cancer.

The state of the blood vessels no less solicits our attention, for they were so large as to be entitled to the name of trunks, none of them sending out small branches or giving any evidence of affording nourishment to the Carcinomatous substance. But on the contrary every circumstance seemed to indicate that this substance in its progress from the lip where it began, enveloped such vessels as lay in its course and contained them, rather as foreign bodies than as part of its own mass. The presence of Hydatids in the ventricles also excites our curiosity, and we naturally enquire was there a general disposition in this subject for the production and lodgment of beings endued with independent life.

## CASE XLVI.

*Open Cancer of the Parotid Gland and Neck; in a Correspondence with the Patient, Dr. L——, of Bristol.*

" SIR,

" Your publication on the use of Iron in Car-
" cinomatous cases, induces me to lay mine be-
" fore you—which, tho' the faculty do not pro-
" nounce such, I think is in danger of dege-
" nerating into it.

" About 14 or 15 months ago, I perceived a
" small tumour or knot like a small indurated
" Lymphatic, situated under the jaw about mid
" way between the Sub-Maxillary and parotid
" glands; but appearing perfectly detached, loose
" in the cellular membrane and not at all pain-
" ful. This continued *(some times however sensibly*
" *lessening)* for about ten months, with no sensi-
" ble increase or pain; but about October last,
" it began to increase, extending upwards to-

" wards the parotid gland—in this state I shew-
" ed it to two or three medical friends, who
" had seen it before, who advised my doing
" nothing more than washing it with salt and
" water, supposing it would never excite any
" serious inconvenience to a man in his seven-
" tieth year. It has however turned out other-
" wise, and from that time its increase became
" more considerable, and during the succeeding
" two or three months, *(in which I had suffered*
" *much anxiety of mind)* it increased to nearly
" double its original size, with some sensible
" tenderness. Being then on a visit in Wilt-
" shire I came to Bristol; and on a consultation
" my Surgeon, Mr. Allard, who then saw it for
" the first time, proposed extirpation, as a practi-
" cable and safe method of cure—but the ma-
" jority being against the operation, it was after-
" wards agreed, under the idea that the tumour
" was encysted to make a puncture into it; and
" if our conjecture was right to pass a seton—
" the event proved we were in error, no fluid
" but blood followed the puncture, and it was
" suffered to unite, which it did—but from that
" time there was a propensity to a point, pro-
" truding with the skin before it; which at
" length became coloured as if the contents
" were a bloody Fungus, and this has gone on
" to increase to the size of a common man's
" first joint of a thumb, only a little pointed—
" this has burst and discharges blood in small

" quantities, not as from a cavity—but this pro-
" truded part is not only increased, but the
" tumour at its base occupies a considerable
" space before the ear towards the face, extend-
" ing downwards to its original point, and also
" rises up so high as to push the lower part of
" the ear up so as almost to form a stricture
" round the ear of a most distressing nature.
" After giving this account, it will be right for
" me now to say that the faculty here not being
" agreed in opinion, about the middle of Fe-
" bruary I went to London, and took the opini-
" on of Dr. Bailie, Mr. Cline and Mr. Aber-
" nethy, two of whom (nor did the other
" dissent) were decidedly of opinion, that the
" disease was entirely of the parotid gland, and
" all were as decidedly against the operation, re-
" commending cold evaporating washes, and
" a Mercurial alterative plan (I must however
" do Mr. A. the justice to observe, that the cir-
" cumstances of the tumour were much aggra-
" vated from the time he advised the operation.)
" In this very unpleasant condition I had to re-
" turn to Bristol; and I suffered not a little in the
" journey from the motion of the carriage—as
" soon as I recovered the fatigue, I convened
" my medical friends, who were unanimous in
" preferring the use of the Rubigo Ferri to
" any mercurial plan, and I complied with their
" judgment for two or three weeks, increas-
" ing the dose to four scruples a day. My

" disorder however was progressively worse, and " having had most distressing pains in my head, " unconnected with the tumour, I set aside " the Iron; but during *a week's intermission, find-* " *ing the same kind of pains return*, I have taken " to it again, and am now taking about four " scruples a day.

" Now, Sir, after this recital, my wish is to " know, whether you think my disease is true " *Carcinoma*, or whether by the lancet being plung- " ed into a depending diseased part of the parotid " gland (of which I have little or no doubt) it " may not have invited the protrusion I have de- " scribed, by making a way for it, and whether " the dark appearance which increases as the pro- " jecting tumour increases, may not be owing " to a kind of strangulation of the protruding " parts; and next, whether you think it will be " justifiable to remove the protruded part by " the knife, (for it is too high for a Caustic, " unless by a painful reiteration, to destroy it) " and then to apply the Iron; and if so, which " preparation of it should be used. And before " you decide this, you will recollect what a large " extended base of gland or schirrous, this cen- " tral (for it is now nearly so) protruding part " stands on—and after well weighing the case I " lay before you, and any other matter which " may suggest itself, I shall thank you for your

" full and candid opinion of the whole, which I " trust I shall be enabled to bear with equani- " mity, and which will very much oblige,

Sir,

Your obedient Servant,

ABR. L———.

" *Bristol*, *April* 6*th*, 1807.

" P. S. My health is otherwise unimpaired, I " was never a man of firm fibre—but I have en- " dured much fatigue in a long professional life, " from which I have retired these fourteen years, " in the midst of every affluence and comfort " which can be the lot of humanity. About " the time I retired, I had with difficulty re- " covered from *Hepatitis*.—Since which I have " drank little else than water and lemonade, and " I have also to add, that before this I was mo- " derate as to drinking, and never had occasion " for Mercury. Constitutional disease I have " none, nor any hereditary but gout, to which " however I have not established any claim; but " I have no small *sensibility*, which some people " would call *irritability*.

" SIR,

" You will see by the date of the enclosed, it " was written a very considerable time ago, and " would have been then sent had not a differ- " ence been expressed by some of the faculty, " and some doubt as to the description, as they " did not consider the tumour as schirrous, &c. " &c. Since I wrote, the tumour I described as " projecting has been opened to the top of it, " and the consequence has been a profuse spring- " ing out of a loose Fungus, called by Mr. Hey, " Fungus Hœmatodes, the neck of skin thro' " which it protrudes may be about one inch, " but the fungus itself spread over the sound " skin is near three inches in dimension; now in " this case do you recommend the application " of the Rubigo, the Phosphate, or the Oxy- " Phosphate? or do you think any advantage " will result from the trial?—I have both as pre- " pared in London. Your immediate answer " will oblige, your obedient servant,

A. L.

*25th May*, 1807.

" P. S. I forgot to say the Fungus bleeds very " largely at times in spite of styptics—can you " recommend any application to restrain it?"

" Sir,

In compliance with your desire, that I should give a full and candid opinion on your case, I must confess, tho' unwillingly, I have satisfied myself that your complaint is of a Carcinomatous nature; I shall begin by stating my reasons, that you may have an opportunity of judging whether I am right or wrong.

When the disease first attracted your attention it evidently answered the description of an incipient Cancer, being *a small tumour or knot, like an indurated lymphatic, which remained indolent for a considerable period without exciting any painful sensations.* The consequences of the experiment with the lancet are such as might be expected from puncturing any Cancerous tumour, *for no fluid but blood followed, and the tumour rapidly increased, and at length became coloured as if its contents were a bloody Fungus.* This increase of a Cancerous tumour after a puncture, I have witnessed myself more than once, and it is mentioned by Dr. Monro, among the few cases he relates of this disease; another instance of which may be found in Mr. Hey's 6th case of Fungus Hœmatodes, altho' he looks upon it as a disease *sui Generis*, but which I have no doubt is a concomitant of Cancer, particularly as this opinion is confirmed by the very

description which Mr. Hey himself gives of the appearances ; but let me premise, that I look upon Carcinoma to consist only of the substance resembling Jelly and Cartilage, and that the Fungus which so frequently surrounds it is no essential part of the disease. In his cases we in general find, that either the Fungus was accompanied with the Carcinomatous substance, or arose after the extirpation of tumours, which, by the description, must undoubtedly have been of a Carcinomatous nature. In Mr. Hey's first case of Fungus Hœmatodes, the most marked of any he relates, it is mentioned, that " upon examining the wound carefully when the contained substance was removed, he found the muscular flesh degenerated into a *hard mass*, which felt some what *like Cartilage*." In cases II. and V. he remarks, that the muscles had lost their usual *distinct appearance*, and in the former that the pectoral muscle appeared as if it had been exposed to the air, and had begun to form *Granulations* on its surface ; but in cases III. and IV. the original disease was Carcinomatous, for the tumour " when divided by the knife, had the appearance of diseased glandular substance intermixed with small cavities, containing a gelatinous or viscid serous fluid," and the Fungus Hœmatodes, as it is called, did not appear till a cicatrix had formed after the extirpation of the above mentioned tumour. From cases VIII. and IX. we can draw no conclu-

sion as they were not anatomically examined. In case x. " the contents were of an ash colour, tho' somewhat variegated, to the touch they felt greasy like the brain."

I have lately seen a Carcinomatous tumour with the appearance here described, but I would particularly call your attention to case VI. as bearing a strong resemblance to your own. " A small tumour the size of a *horse-bean* was first observed on the ancle, it was moveable but not painful, and afterwards the tumour was punctured, and a dark coloured Fungus resembling coagulated blood arose from the wound." " The Fungus when divided (after amputation) appeared variegated like a nutmeg, some parts appearing red like blood, while others were almost white," this appearance is exactly similar to that I have observed in the Fungus which sprouts from open Cancers. *

If you are of opinion with me that the Fungus Hœmatodes is nothing more than the Fungus usually attendant on Cancer, you will no longer entertain any suspicion with respect to the strangulation of a portion of the parotid gland, and the nature of the disease will be further ascertained, by reflecting on its commencement and general progress, in every respect so much resembling Carcinoma.

* V p. 143. Case XXXVII.

I shall now proceed to consider the most probable means by which the disease may be either removed or alleviated.

As there can be little doubt that the Parotid gland, and probably the entire of it is now engaged in the disease, any attempt at extirpation would be entirely unadviseable, but in the commencement the disorder was within reach of the knife, and at the time recommended by Mr. Allard, might probably have been removed with safety.—But as to removing any part of the Fungus, the danger of Hœmorrhage would be so great that I cannot by any means recommend it; and were it even safe, the object intended would scarcely be obtained, as the continual discharge of blood that must follow, would inevitably prevent the Iron from remaining in contact with the Cancer. I would therefore propose that you should immediately apply a quantity of the Oxy-phosphate of the Iron to the whole extent of the tumour. It may be moistened with water and applied in the form of a poultice, and when dry, moistened from time to time; a portion of so large a quantity must be absorbed and in some degree influence the disease. But as I have lately found that a frequent change of the preparations of Iron has a very beneficial effect, for reasons that will occur to you, I would by all means recommend that you would obtain as soon as possible a quantity of the Sub-oxy-phosphate of Iron

and apply it in the same manner, using them alternately for a few days, continuing that longest which affords most benefit.

The latter is prepared for me by Mr. Accum, of London. It is but lately I had an opportunity of trying it, altho' it has long struck me as likely to be the most efficacious of all the Salts of Iron, and as yet it has not disappointed my expectations.

It is absolutely necessary that you should take these preparations internally; I have not given them in larger doses than five grains three times a day,* but you will be able to judge yourself whether you can go farther. If you would consider me in the light of a friend and let me know from time to time the state of your health, you will much honor and greatly oblige, Sir,

Your most obedient,

and very humble Servant,

R. CARMICHAEL.

*Dublin, June 1st,* 1807."

I never afterwards had any communication from Dr. L——, but have since learned that he fell a victim to the disease.

* I afterwards found that this preparation might be exhibited in much larger doses, as may be seen on referring to other cases.

## CASE XLVII.

*Anomalous Disease affecting the entire Body and bearing some Resemblance to Carcinoma.*

In April, 1807, I was requested to leave Dublin to see a gentleman residing in a distant part of the kingdom; his disease was of so uncertain a nature, that it cannot in strict propriety be arranged among cases of Cancer.—It was singular in its origin, progress, and appearance, and was not entitled to the name of Scrophula, Carcinoma, or any other disease which came within my knowledge, either from experience or reading: It was supposed by his medical attendants to approach nearer to Cancer than any other disease; but I shall briefly state the appearances and history of the complaint, and thus enable others, as far as I can, to form conjectures concerning its nature; tho' I must premise, that without drawings, a very inadequate idea of its appearances will be formed.

The patient was about 50 years of age, and much reduced, but from his appearance, it was easy to perceive that he had been a strong muscular man before his confinement. As the chief source of his uneasiness, my attention was directed to a large tumour upon his left arm, situated immediately above the flexure of the elbow, and extending upwards more than half way to the shoulder; the part where it was situated appeared to be at least three times greater than its natural size. This tumour which occupied the circumference of the arm (tho' its chief bulk was on the outer part) was of a stony hardness, and of a very irregular figure, discharging a thick white glutinous matter, from an irregular red surface, which had more the appearance of an excoriated than an ulcerated part, and gave an idea that the skin had inflamed from over distention, and in part sloughed away. He felt occasionally shooting pains in this tumour, which he did not perceive in any of the others that I am about to describe; but the burning heat, and sense of tightness it produced were a constant source of such unremitting pain, that he could not rest a moment in one posture. The arm below to the fingers ends was œdematous and swollen, owing to the pressure of the tumours, which the patient said created the painful sensation of a tight cord binding the arm, and stopping the circulation. Situated above this mass, and in a chain to the shoulder, were three

or four smaller, of a bright red colour, but which neither discharged matter nor possessed the hardness of the first mentioned tumour.

There were also two tumours about the size of a turkey's egg, one situated upon the breast over the Pectoral muscle, and the other over the Scapula of the right side; both of these were of a more globular form than the others—of a bright red colour, but were neither ulcerated nor of a hard consistence—affording to the touch much the same impression as would be given by a Steatomatous tumour. Besides these, there were several smaller ones on his legs and thighs of the same consistence.

Doctor Poole pointed out to me one as large as a middle sized plumb, that had appeared immediately after a slight contusion, which he received about ten days before by accidentally striking his leg against the rail of a chair.

Both Testes were engaged in the disease, the right one chiefly, which together with the cord, was indurated, irregular, and enlarged to a prodigious size; from its pressure when supported on the hand, it must have been of several pounds weight. The left testis was also indurated, but not much enlarged.

His countenance was sallow but not of that deadly paleness which indicates a general predisposition of the system to Cancer, instances of which may be found in cases XLII and XLIII.

His appetite had entirely failed, and the little nourishment he took seemed to be forced merely in compliance with the entreaties of his friends.

In the history of this extraordinary case, I can discover no clue which can lead to a knowledge of the disease, but possibly others may be more fortunate, I shall therefore give it precisely as I learned it from the patient himself, his physicians and his friends.

He had for the greater part of his life enjoyed remarkably good health, and possessed a great natural flow of spirits, but about two years before I saw him, without any visible cause, he became silent, incommunicative and melancholy; in fifteen months after this change of his natural disposition, the right testis was first observed to be harder than natural and somewhat enlarged but unaccompanied by pain. The induration and enlargement increasing, Doctors Poole and Lamphyre, were consulted, who even at this early period conceived the case to be somewhat extraordinary, and therefore recommended him to go to Dublin, in order that he might have the

opinion of men of the first character and experience. He came to Dublin in November 1806, and was seen in consultation by three practitioners of the first eminence in this city.

If we may judge of their opinions by the medicines they prescribed, we may conclude they did not conceive that the disease was at that time of a cancerous nature; for he was ordered to commence immediately a course of mercurial medicines, in which he was to persevere for several weeks on his return to the country, under the direction of his former physicians. The patient informed me, he happened accidentally to mention at the consultation, that he had since his youth several small tumours in different parts of his body, which he attributed to strains or over-muscular exertions from throwing the sledge and other athletic exercises to which he had been accustomed, but that these tumours had never excited the slightest pain or uneasiness. The largest of them about the size of a wallnut, was situated on the right arm near the elbow, the others were considerably smaller and all were soft and compressible, covered by healthy skin, which was not in the slightest degree discoloured. His surgeons of course examined these tumours, and one of them put him to severe pain by too roughly handling that upon his arm, and to this circumstance, he attributed its subsequent increase of size beyond the others.

It is a curious fact, that these tumours which for near thirty years remained perfectly indolent and stationary, began to grow painful and to enlarge, as soon as the mercury affected his constitution. They then rapidly increased, the skin which covered them became of a bright red colour, but more particularly that situated upon the arm, the pain of which called the patient's attention from the other tumours, each of which in itself was a formidable malady.

Besides mercury, other medicines were afterwards employed; Cicuta was given to a great extent without producing any good effect; and opium was exhibited in large and repeated doses, with the view of alleviating his pains. A great variety of topical applications had also been made use of, which uniformly tended, as his physicians mentioned, to exasperate the disorder. These tumours to which applications even the most simple were made, increased more rapidly than those which were left quiet—indeed they appeared to increase even under an unnecessary touch of the hand.

I enquired, if any one of the tumours still retained its original appearance, unaltered by the exhibition of the mercury, and he pointed out a small one on his right leg, which he told me all the others had exactly resembled. It was of a flattened form, the skin of its natural colour,

and scarcely raised sufficiently to produce the appearance of a tumour. It was soft and yielding, but not of a circumscribed figure, nor had it the appearance either of a scrophulous or of a cancerous tumour, but felt as if it contained some medullary substance.

I conceived it useless to try any remedy where the disease had proceeded to so great an extent, particularly as we were unacquainted with its nature. It was decided however on consultation, that a trial should be made of some preparation of Iron, and the Sub-Oxy-phosphate was applied to the large tumour on the arm, and the same medicine was taken internally; under this treatment the patient for two days said he was much easier and rested better than before, but this relief might have been imaginary owing to that strong hope which a patient generally feels upon the exhibition of a new remedy.

I understood he lingered for two months longer in the greatest misery.

I have now detailed the appearances and history of this extraordinary disease, and frankly own that I feel myself unable to make any tolerable conjecture concerning either its nature or origin. It had none of the symptoms or appearances usual in scrophula, and when all the

tumours are collectively considered it was equally unlike Cancer.

I know not whether we should date the commencement of the disease from the formation of those small tumours, which took place thirty years before, or consider the affection of the Testes as the beginning of the disease; in forming an opinion on this head we should recollect that the Mercury seemed to be the exciting cause of the enlargement of those tumours, for until that medicine was exhibited they remained perfectly indolent without exciting the smallest uneasiness. The Testes had undoubtedly the hardness, weight and inequality, which those parts possess when they become Cancerous, but they had not the lancinating pains, a symptom which I have never known to be absent in Cancer.—The tumour on the Arm, tho' it had the lancinating pains, and was hard and unequal, yet it was totally unlike any cancerous tumour that I had ever an opportunity of seeing, and not one of the other tumours had a single symptom in common with Cancer. They were soft, compressible, of a regular circumscribed figure,* and of a clear red colour; besides one of them sprung up in ten days after a slight contusion,

* This last circumstance was not the case before they began to inlarge as appeared by that which retained its primitive appearance.

a circumstance I believe unprecedented in the history of Cancer.

When we meet with a disorder unlike those with which we are acquainted, we naturally enquire, if it resembled any disease of other times or climates, and the idea that this disease might be allied to the Elephantiasis of the Ancients, will, I dare say, strike many, as I own it did me, particularly in the affection of the Testes, and in the formation of tumours in different parts of the body, which answer in a great degree the following description of that disease, given by the ingenious Dr. Adams, as he observed it in the Island of Madeira, where it is still to be found :—" At first the tumours " rise only a little above the skin, have the natu- " ral colour of that membrane, or are even " paler, the circumscription is irregular, seldom " circular, but beset with lateral projections, " which, however, are not angular. The co- " lour and elevation of the tubercles will in " most instances remain stationary for a consi- " derable time ; as they become redder, or in " people of fairer complexion more transparent, " they acquire the splendour before mentioned. " Commonly the centre becomes more elevated, " and so on towards the edges, so as to render " the tubercle somewhat rougher. They still " however, retain their splendour, till they crack " in one part, in consequence of which, the

" whole is suffused with a white furfuraceous " substance."*

The tumours in the case I have related, as appeared by that which retained its original figure, were at first irregularly circumscribed, and scarcely raised above the surface of the skin ; they afterwards, but not untill the Mercury was exhibited enlarged, and undoubtedly acquired a splendid red colour, and might even have been said to be transparent, and the centre of each somewhat elevated ; the large tumour on the arm was also covered by a white slimy discharge, which probably Dr. Adams would have termed Furfuraceous. It differs however in this respect from Elephantiasis, that in the one the Testes were enormously enlarged, and in the other are always diminished or wasted. In the latter tumours or Tubercles are found on the upper and anterior part of the thigh, and in the face, particularly on the external ear, Alæ nasi and forehead, but in the former there were no tumours in any of these situations, which Dr. Adams remarks, are seldom or never exempt from them in Elephantiasis. But it does not appear from the Doctors description of that disease, that the Tubercles remain indolent for so very long a period, and afterwards increase to so great a size as those I have described. Has he or any one to whom the disease is familiar, ob-

* Adams on Morbid poisons, p. 272.

served cases of it varying so far from the general course of the disorder as to resemble that I have described, or have they found that it is exasperated, and its usual progress altered by the use of Mercury.

As instances of the Elephantiasis of the Ancients, have occurred to Dr. Bailie, and Mr. Pearson, it is not improbable, that it more frequently takes place in these islands than is generally imagined, but from our ignorance of its appearance may be confounded with other diseases.

## CASE XLVIII.

*Occult Cancer of the Breast, &c. in two Letters from Mr. Bell of Edinburgh.*

" *Edinburgh, June* 16*th*, 1808.

" SIR,

" Although I have not the pleasure of being " personally known to you, yet I am in some " measure acquainted with you, through the me- " dium of your Essay on the effects of Carbo- " nate of Iron on Cancer, which I perused " soon after its appearance, and which, as the " cases and observations contained in it seem " to me, to be related with candour and liber- " ality, I conceive to merit the thanks of the " public, and the serious attention of our Pro- " fession.—On these grounds, I am well pleased " in being requested to correspond with you on " the present occasion.

" Mrs. C———, the mother of the gentleman
" who will hand this letter to you, aged about
" 70, applied to me on the 15th March, on ac-
" count of a hard painful swelling of the left
" Breast, which she had observed for the first
" time eighteen months ago, and which had
" been increasing steadily since that period. The
" swelling was of the size of a small woman's fist,
" in the centre of the Mamma, perfectly unat-
" tached to the Pectoral muscle, irregular on
" its surface, colourless, painful to the touch,
" frequently accompanied with sudden shooting
" pains, darting into the Axilla, and down the
" side. The Mamma, being a large one, pro-
" minent, and rather flaccid, formed a deep fur-
" row, or fold, where it overlapped the sub-
" jacent parts, and the moisture of the perspi-
" ration and heat, from her stays, and tight
" bandages, had occasioned a slight superficial
" Ulceration of the skin, in the neighbourhood
" of this furrow. There was besides, a greater
" degree of *fullness in this Axilla, than in that* of
" the right side, and I could perceive distinctly,
" a small superficial moveable indurated gland.
" Mrs. C——— ascribed the origin of this com-
" plaint to a blow which she received on the
" affected Mamma, six or seven years ago,
" although she never was sensible of pain or en-
" largement of the parts, until the period for-
" merly specified. She had in general enjoyed

" very good health, although on two or three " occasions, she has had a slight attack of " Asthma, from exposure to cold, in unseason- " able weather.—Having concealed her com- " plaint from her family, she had never made " use of any active remedies.

" Under these circumstances, I had no hesita- " tion in recommending the immediate ex- " tirpation of the diseased parts, more especially, " as the glands in the Axilla were obviously af- " fected, and it was impossible to foresee how " soon the operation would become inadmissible. " She could not bring herself to submit to the " operation immediately, and requested that I " would make trial of such means as I thought " would have the best chance of retarding the " progress of the disease. I told her how un- " availing every internal medicine, and external " application had been found in similar cases, " and this I did, that she might not form expec- " tations which in all probability never would be " realised, and which might induce her to per- " severe in the use of such medicines, to the " exclusion of the operation, which alone I " conceived could effect a radical cure. Having " thus warned her, I put her on a course of the " powder and extract of Cicuta, and extract of " Hyosciamus, and desired her also to rub " the indurated parts gently evening and morn- " ing with some mercurial ointment, and to

" bathe the excoriation with a solution of acetite
" of Zinc. In the course of a few days the exco-
" riation was completely healed, and has continu-
" ed so ever since. Little change took place in the
" state of the tumours, but the *axillary glands obvi-*
" *ously increased from week to week.* On the 12th
" of April, she asked my opinion with regard to
" the use of the preparations of Iron, as she had
" heard that you had cured Cancers by means
" of them. I stated to her fairly my opinion
" and experience of these medicines, that I had
" employed them, and seen them used in a con-
" siderable number of instances, *that in some the*
" *Patients got well under the use of them, while in*
" *others farther advanced they did not arrest the*
" *progress of the disease*, and that I did not con-
" sider hers as a proper case, for giving this kind
" of remedy a fair trial.—I told her however,
" at the same time, that the internal use of Iron
" would do her no harm, and that, although
" the external application of it was scarcely
" admissible with her, as there was no Cancerous
" or other sore, to which it could be applied, I
" could see no objection to her making trial of
" some preparation of it internally.—She began
" to take 15 grs. of the Carbonate of Iron
" three times a day, on the 12th April, and
" has continued it since then at that rate, so that
" she has now used about $6\frac{1}{2}$ ounces of it. I
" am concerned however to say, that the disease

" has rapidly gained ground, the tumour of the " Breast has become larger, the neighbouring " parts have a puffy appearance, and the glands " *in the Axilla are now so much fixed*, and the " deeper *seated ones so much diseased*, that I am " afraid the success of any operation would be " exceedingly doubtful, and if any considerable " delay were to take place, that it would be im- " prudent on her account to recommend an " operation.

" Under these circumstances, I am desired to " request to know, whether you have since the " publication of your Essay, met with any cases " such as I have described, which have yielded " to the external or internal use of Iron, whe- " ther you would be inclined to persevere any " further in giving the Carbonate internally, or " would apply some solution of Iron externally, " and whether you conceive there are any rea- " sonable grounds for delaying the operation.

" In the hopes of hearing from you, as soon " as you have had an opportunity of consider- " ing the circumstances of this case, I have the " honour to be,

" Sir,

" Your very obedient Servant,

" GEORGE BELL."

*Edinburgh, October* 17, 1808.

SIR,

" In consequence of my absence from town, " for nearly three weeks, on a tour of professi- " onal and other visits in Cumberland, and the " South of Scotland, I was not, honoured, by " the receipt of your letter of the 14th ult. un- " til long after it was due, and even on my re- " turn to town, as our Patient, Mrs. C———, " lives at the distance of Ten miles from this " place, I thought it would be better to delay " answering your letter, in order that I might " again have an opportunity of seeing her, and " of conveying to you the most recent intelli- " gence respecting her. This I trust you will " accept as my apology for my apparent " negligence in not sooner replying to your in- " quiries.

" I wish it were in my power to give you a " favourable report of our Patient. Matters " have continued to get progressively worse, " since I first wrote to you ; immediately after " receiving yours of the 28th June, I began " with the Sub-oxy-phosphate of Iron, in the " dose of 15 grs. twice, and sometimes thrice " in the day, which she has continued with

" scarcely any interruption, and with little in-
" convenience ever since ; and I gave her the so-
" lution of Acetite of Iron to apply externally
" in the way you recommended. The swelling
" in the Axilla, and the tumours of the Breast,
" continued to increase for many weeks, but
" without much external inflammation, until
" they at last united into one diffuse mass of
" disease. About five weeks since, a number
" of small hard tumours, not larger than a
" common Pea, appeared on the Breast ; these
" inflamed and suppurated, and discharged a
" thin fœtid matter ; the inflammation ac-
" companying these seemed to propagate itself
" to the opposite Breast, and to occasion a con-
" siderable swelling of the soft parts covering
" it, for I am not satisfied that the Gland of the
" right Breast is as yet affected. She suffers a
" good deal of distress from bodily pain, as well
" as from mental anxiety—she sleeps ill in the
" night time, even with the asistance of a large
" dose of Laudanum, and she seldom rises be-
" fore four o'Clock in the afternoon. Her pulse
" is a good deal accelerated, her appetite much
" impaired, and on the whole, I am afraid she
" will not survive many weeks.

" In giving you this unfavourable representati-
" on of our Patients situation, I cannot avoid
" remarking, that her case is an extreme one,
" and that I should not be disposed to regard it

" as a test of the value of your mode of treat-
" ment, or of any other remedies for the cure
" of Cancer. The disease was too far advanced
" before she applied for assistance, and the ra-
" pidity of its progress since then, marks its
" virulence, and a disposition to it in her Con-
" stitution, which I am satisfied nothing could
" have counteracted. In a case of this kind, it
" is impossible to appreciate the effect which the
" preparations of Iron employed, may have had
" in counteracting the progress of the disease.—
" Were I to offer any opinion on this occasion, I
" should be inclined to say, that the external in-
" flammation has not kept pace with the rapid
" progress of the other symptoms, and the de-
" cline of her general health ; but how far the
" preparations of Iron employed may have in-
" fluenced this circumstance, I cannot presume
" to determine. I shall certainly not be deterred
" by this case from trying them on favourable
" occasions ; Indeed I have been using them in
" a case, similar in many points to Mrs. C——'s,
" and beyond the reach of the knife, for several
" weeks past.

" I am sorry, that in consequence of not hav-
" ing preserved a sufficiently detailed account of
" the cases in which I have employed the prepa-
" rations of Iron in Cancers, as well as from the
" difficulty of procuring distinct narratives of
" the progress and termination of these Cases,

" some of the Patients residing at a distance, and
" only coming to town occasionally to consult
" me, I cannot state them in such a manner as to
" render them fit to meet the public eye. I shall
" venture only to observe, as the *general* result
" of my experience of the use of Iron in Can-
" cers, that the preparations of this metal seem
" to me to be better calculated for these cases
" of superficial cuticular Ulceration, which very
" much resemble Cancer, which are generally
" treated as Cancerous, and are often removed
" by the knife—for example, those which we
" frequently meet with on the Alæ Nasi, the Eye-
" Lids, the Forehead, and even on the Lips—
" than for those cases of Cancerous Ulceration
" of the Mamma, or Testis, which are accom-
" panied by a deep seated induration of a glan-
" dular part. For these last, I conceive the knife
" holds out by far the most probable prospect of
" a cure, although were the knife not to be em-
" ployed, either as being in itself inadmissible,
" or from the timidity of the Patient forbidding
" it, I would make trial of such other means of
" relief as are in our power; and among these, I
" certainly consider the preparations of Iron as
" being likely to turn out a very useful remedy—
" with regard to the case of Mrs. C———, you
" are heartily welcome to make use of it, only,
" you will of course suppress her name, and as
" it was not written for publication, I trust you

" will make such verbal corrections of it as you " think are necessary. I have the honour be,

" Sir,

" Your very faithful and obedient Servant,

" GEORGE BELL."

In concluding my observations on the Cancerous cases contained in this last class, I cannot withhold my fears, that the moment the disease *begins* in persons so predisposed for its reception, it is *even then* too late to expect any remedy will be effectual. The attack should be prevented that cannot be parried—and subjects of a Leucophlegmatic, sluggish, inert habit—of a pale, sallow, melancholy countenance, and whose constitution strongly indicates an inclination to this disease, are sufficiently Invalids to require the aid of a Physician. A course of the simplest preparations of Iron, or the seasonable use of a Chalybeate Spa may not only overcome the predisposition to this complaint, so far as to prevent its access on every trivial accident that might otherwise give it birth; but would improve the general health, brighten the complection, and give a vigour to the constitution, that such persons as I have been describing seldom or ever experience.

## CHAPTER II.

### OPINIONS CONCERNING CANCER.

### SECTION I.

*Opinions of the Ancients.*

AMONG the number of diseases, which occupy the Physician, not one has so completely eluded his researches for its cause, or his exertions for its cure, as that which at present engages our attention.

Theorists of every age have endeavoured to account for the sources of Cancer on those speculations, which led them according to the fashion of the day, to impute to the same origin diseases essentially different in their nature.—

But that which most conduces to suppress any spirit of enquiry is the facility with which we yield a deference to the doctrines of authority, and reject the suggestions of our judgment and experience. Thus the Aphorism of Hippocrates, * in which we are directed not to attempt the cure of Cancer, has been almost literally obeyed for upwards of two thousand years—and 'tis only of late, that any rational enquiry has been made concerning its nature, by that mode which would appear the most obvious, an investigation into the structure of the diseased mass.

We find Celsus † almost as strongly prohibiting any attempt for the removal of Cancer, who says, that in his time, a few employed Escharotic medicines, that some destroyed it with the Actual Cautery, others removed it with the knife, and that no medicine availed, but that all these means only served to irritate and in-

* Cancros occultos omnes melius est non curare.—Curati enim cito pereunt, non curati vero longius tempus perdurant.

APHORISM, Sect. vi. 38.

† Quidam usi sunt, medicamentis adurentibus, quidam ferro adusserunt, quidam scalpello exciderunt, neque ulli unquam medicina proficit; sed adusta, protinus concitata sunt, et increverunt, donec occiderent. Excisa etiam post inductam cicatricem tamen reverterunt.

CELSUS, Lib. v. Cap. 28.

crease the Cancer, till at length the Patient became its victim; and that any attempt at extirpation, even tho' the wound should cicatrize, was only attended with a return of the complaint

However a far greater latitude in the employment of remedies for this disease, is admitted by Galen, who in his commentary on the Aphorism of Hippocrates, * above alluded to, explains the epithet occult, as either describing a Cancer, before it has proceeded to Ulceration, or one situated in a remote part of the body, as the Palate Rectum or Uterus. In the former instance, he directs us to extirpate the diseased part, when situated so near the surface, that it can be removed at once with its roots, but in the latter † he agrees with Hippocrates, in the prohibition of every kind of remedy. Incipient Cancers he also tells us, may be readily cured, because the

* Gal. in Aphor. Hipp. Lib. vi. Tom. 4. p. 705

† Nam et qui Cancrum in palato constitutum, et in sede, et in sinu occulto muliebri, vel usserunt, vel secuerunt, non potuerunt hulcera ad cicatricem perducere, et homines in curatione afflictos, ac maceratos, usque ad mortem adduxerunt: qui si nullam curationem adhibuissent, longiore tempore vitam, cum minori molestia transegissent.

Tales igitur cancros nullo modo curare tentemus: ex eis vero, qui in summa parte corporis hærent, illos tantummodo, quos possumus, una cum radicibus, ipsis ut quispiam dixerit resecare.

Gal. in Aphor. Hipp. Lib. vi. Tom. 4, p. 705.

*Atrabilious humour*, at this period of the distemper, not having as yet acquired its gross nature, quickly yields to purgatives *—but for this information, we are probably more indebted to his theory than to his experience of the disease, for we do not find in any succeeding author, that it was ever cured by purgative medicines; and Paulus Æginetæ expressly tells us that Cancer † is of so obstinate a nature, on account of the grossness of the humour to which it is owing, that it can neither be repelled or discussed by any medicine, not even by purgatives. The same author also gives us a brief account of the opinions of his day, respecting the causes of Cancer; from

* Hunc igitur Morbum (ut diximus) in principio sanavimus, & tunc præsertim cùm atræ bilis humor non admodum crassus videbatur existere. Nam hic purgantibus medicamentis, ex quibus sanitas sequitur, prompté succumbit.

*Gal. ad Glau Lib.* ii. *Tom.* 3, *p.* 1391.

† In qualibet corporis parte Cancer orire potest, siquidem in oculis et mulieribus etiam locellis, atque alüs corporis partibus bene multis, verum precipue in fœmenarum mammis provenit: quoniam naturæ laxæ et fungosæ crassimam atrabilis (unde hoc malum gignitur) materiam promptius excipiunt.—Venæ circa id malum turgescunt et intenduntur instar pedum animalis Cancri, unde appellatio huic initio indita est. Inquiunt vero nonnulli eo quod evellatur ab his quas ocupavit partibus velut Cancer animal aquaticum. Hoc malum, ob humoris crassitudinem nulla medecina eliditur; ut quod neque repelli, neque discuti queat neque purgationibus corporis cedat, sed tam malificæ naturæ ut mitioribus medium unguem porriget, asperioribus autem irritetur.—Lib. iv. Cap. 26.

these we learn that every part of the body is liable to this disease, but more particularly the Breasts of Women, as on account of their loose and spongy nature, they imbibe the more readily the thick matter of Atrabilis, to which the disease is owing. This malady he tells us has received its appellation Cancer on account of the large *veins* which extend themselves in every direction like the Claws of a Crab ; but some were of opinion that it was so named from its near resemblance to that animal, in the force and obstinacy with which it seizes upon and retains its prey.— This doctrine concerning the cause and nature of Cancer continued to be repeated from one Author to another, with little variation, till Paracelsus caused a revolution in the schools of medicine, in the 16th century. But before I close my account of the opinions of the Galenists, I shall cite a passage from one or two of them to evince the improbability there was of discovering an efficacious mode of treating Cancer, while their inconsistent theories guided them in a practice which, if possible, was still more absurd.

In Ambrose Parey * we read " that there are two causes of Cancer, the antecedent and conjunct ; the *antecedent* cause depends upon the default of irregular diet, generating and heaping up gross and feculent blood, by the morbific

* P. 219, translated by J. Johnston, in 1649.

affection of the Liver, disposed to the generation of that blood; by the infirmity or weakness of the spleen, in attracting or purging the blood; and by the suppression of the courses or hœmorhoids, or any such accustomed evacuation. The *Conjunct cause* is that gross and melancholic humour sticking and shut up in the affected part as in a strait—that melancholic blood which is more mild and less malign, only increased by a degree of more fervid heat, breeds a not Ulcerated, but the more malign and acrid causes an Ulcerated Cancer." So far M. Parey—but Rodericia Castro informs us in his account of the diseases of Women, that there was a remarkable controversy among medical writers concerning the origin of Cancer, which the curious reader may find in the margin, and comprehend if he can*. Even our countryman, Wiseman, whose practical observations are at this day valuable, fell into these conceits, but not without having his own peculiar

* Illustris & controversiæ plena est de materia Cancri apud scriptores disputatio, nam Brachelius ex melancholico succo minimé adusto orriri; ideoque male quosdam ex fervidâ bile gigni dixisse pugnaciter contendit. Placiti ansam Galenus dedit qui Cancro causam præbere dixerat humorem melancholicum, qui est fex sanguinis & a liene attrahitur, is autem humor adustus non est, neque fervidus, sed pura sanguinis superfluitas atque benigna, cum sit lienis alimentum recte dixeris sanguinem melancholicum, cum eodem 6. aph. cit. Huic è directo contrariam tutatur sententiam cum Paulo Fernelius, qui ex bile atra sanguineve fervido ac retorido cancri originem constituit, utraque tamen harum opinationum illiminanda.—*Rod. Cast. Lusitanni Lib.* i. *pars.* 2, *p.* 145.

opinion on the subject. From him we learn "that the cause of Cancer was usually said to be an adustion of humours which upon an over concoction or rather broiling, grew retorrid and sharp; but *he* rather thinks the matter of the humour to be in fault, which by some error in concoction becomes sharp and corrosive; and in a parenthesis he adds, "It may be Arsenical, as appears by the sloughs we sometimes find made in a night." In short, it is painful to reflect how improvement in the healing art has been impeded for so many centuries by absurdities similar to those I have instanced, founded on the fertile and licentious speculations of Galen, and repeated with little alteration by his successors, from one age to another.

To notice these records of the neglect of every rational mode of research, may be beneficial, as it exposes the folly of expecting useful discovery from a process that can only be attended by disappointment and despondence. Amidst the increasing light of modern knowledge, we may be permitted to hope that this disease will not long continue the reproach of Medicine, and a testimony of the weakness of human Reason.

The mode of treating the disorder may be justly presumed as absurd and inefficient as the opinions concerning its origin, and thus we find in

almost every ancient Author, a long catalogue of inert or incongruous remedies, tho' at the same time, we are generally informed that the Knife and Cautery are alone to be depended on.—We have in one view, in a compendium of the practice of Physic, published by Schmitzius in 1600, at Leyden *, the favourite and established remedies for Cancer, among which there are many calculated to provoke a smile by the extraordinary reasoning which introduced them into practice. But it is evident that this disease, was then as little affected by remedies as at present; for Vesalius after enumerating as great a variety of medicines as Schmitzius, closes his chapter with a melancholy reflection on the perverseness of the disease, which calls upon us to abstain altogether from powerful remedies, and content ourselves with lenitives, altho' their virtue extends no further than to cleanse the Ulceration†.

* Among many absurd remedies we find the following :—Cochclearum carnes elixæ—Cancri fluviatiles—Ranæ virides—Oleum Ranarum—Cineres Cancrorum—Pulvis Stercoris humani—Lac Asinum—Catellorum & felium sectorum applicatio—oculi Cancrorum in marmore Lævigati sumpti cum jusculo vel vino plurimum possunt in maximis doloribus Cancri—nonnulli quotidie gallinam apponunt, quam comedit Cancer.

*Schmitzii Compend. Pract. Med. p.* 62.

† Tutius igitur, cum contumaciam morbi hujus vidiamus. a vehementibus medicamentis abstinebimus, solis lenibus &

However we are not entirely to neglect the Precepts of the Galenists, on account of the confused medley of remedies they have transmitted to us ; for some of them at least are capable of palliating the malignity of the disorder, and among the number I include the recommendation of frequent Purgatives*, which tho' probably at first directed with the intention of evacuating *atrabilis*, would not have been so generally esteemed, if some real benefit had not been observed to follow their exhibition—and no means seem more likely to prevent the increase of a Cancer, when situated near the external surface, than the practice here recommended, which by determining the impetus of the blood to a distant part, diminishes its force in the neighbourhood of the disease ; and we need no further proof of the necessity of lessening as much as possible, the excitement arising from a malady attended with so much pain, than the knowledge

quasi adblandientibus contenti præcipuè in maximè Ulceratis Cancris. *in quibus si non aliud agamus saltem saniem abluamus.* *Vesalii Chirurg. Mag, Lib.* v. *Cap.* 17, *p.* 1096.

* *Galeni Meth. Med. Lib.* xiv. *Tom*, 3, *p*, 1330.
*Pauli Æginetæ Lib.* iv. *Cap.* 28.
*Andreæ Vesalii Chirurg. Mag. Lib.* v. *Cap.* 17.
*Hieronymi Fabricii Lib.* i, *Cap.* 22, *p.* 120.
*Guil. Fab. Hildani Cent.* 3, *Observ.* 87.
*Wiseman's Surgery Book* i, *Chapter* 21, *p.* 102, *&c. &c. &c.*

of the injurious effects, which always succeed the use of emollients, stimulants or whatever tends to quicken the circulation.—The same observation applies to the frequent use of Leeches, which Ambrose Parey* informs us, is a powerful means of alleviating the severe pain so often attendent on this disease.

Another class of remedies much esteemed by them in this and other diseases, which come under the care of the Surgeon, is the external use of narcotics particularly the solanum nigrum; in the juice of which Paulus Æginetæ† desires folded linen to be moistened and constantly applied to the Cancer; these means tho' incapable of removing, may yet retard the progress and alleviate the torments of this disorder, and appear to be too much neglected by the modern Surgeon.

When the doctrines of Paracelsus began to subvert those of Galen in the Shools of Physic, Cancer as well as other diseases to which it bore not the smallest resemblance, were supposed to have their origin either from corrosive Acids or Alkalies accumulated in the blood and impelled if their attack was local to the seat of the disease.

* *Ambrose Parey, book* vii. *Cap.* 30,

† *Pauli Æginetæ Lib.* iv, *Cap.* 26.

The most reasonable of these theories may be found in Hildanus, where we read, that the learned Heurnius, had observed two several poisons to exist in Cancer, the one of a putrid the other of a corrosive nature. If Emollients, which are usually employed to promote suppuration, should be applied, the former is brought into action and deeply infects with its putrescent virus; but if Escharotics are resorted to, the other poison is then excited, which consumes the surrounding parts. *

Thus Heurnius, I may say poetically but not unjustly describes, the implacable nature of a malady that is but exasperated by remedies that relieve other diseases, to which it perhaps may bear an external, but not a more intimate resemblance.

It would be needless to consume time, in repeating hypotheses that have been long since exploded, and as little founded in truth, as those

* In Cancro enim inquit doctissimus Joh; Heurnius, duplex esse venenum observatum est, unum putrefactivum, alterum corrosivum, si igitur ei admoveas calida & humida remedia, quæ pus promovere solent, in apostematibus ac Ulceribus, pepasmi capacibus, inde in altam putredinem degenerabunt, cunctaque vicina putrilagine contaminabunt. Quod si illam fætitatem causticis castigare volueris, surget alterum, quod in Cancris venenum est corrosivum, ac vicina cuncta exuret.

*Guil. Fab. Hildani Cent.* iii. *p.* 268.

to which they succeeded. I shall therefore pass them hastily by, to take notice of others, which perhaps approach nearer to truth.

Van Helmont in his chapter de Ideis Morbosis, instances many diseases which he very imcomprehensibly supposes to be propagated by seeds, and to exist independently in the system * ; and illustrates his Hypothesis by the example of Cancer, which he tells us, in its origin and progress resembles in size, and in the expansion of its roots a germinating bean. But were the original Cancer destroyed by Ulceration, another plant more deeply rooted would succeed to the old ; † and he elsewhere observes, that this disease, from an imperceptible beginning, becomes in truth a *subsisting Being*, endowed with many properties. ‡ Undoubtedly Van Helmont, indulged similar opinions concerning other diseases, for which he could have no rational foundation ; but it is not

* De Ideis Morb. Van Helmont, *p.* 543.

† Etenim quamvis fundus Cancri exulcerati, æri expositus, fuerit objectum primum, ubi conceptus & natus fuit : attamen fundo illo per corrosionem absumpto, semper penitior alter succedit, novo contagio infamis, velut ac si nova faba indies germinaret.

*Van Helmont de ideis Morbosis*, *p.* 546.

‡ Ergo morbus est *ens veré subsistens* in principio invisibili, proprietatibus variis donatum : non autem intemperies vel diathesis, ex contrietatis pugna, mistione, gradu, & humorum fictorum comitantia surgens.

*Van Helmont*, *de ideis Morbosis*, *p.* 546.

unlikely, that his acute judgment struck with the Phenomena of Cancer attributed to it independence of life, but actuated by too great a desire of generalizing facts, improperly extended the same doctrine to other diseases.

Notwithstanding Van Helmont's opinions, Cancer was still supposed to arise from a vitiated state of the fluids, and no other origin was assigned, till near the conclusion of the seventeenth century, when this disease excited considerable attention by assailing the life of so great a personage as Ann of Austria, mother of Lewis XIV.

Among those who then offered their opinions, M. Gendron most deserves our attention, for discarding the Chemical Hypotheses then in general favour, and grounding his theory alone on the structure of the affected parts, which he accurately examined. He supposes, the disease only to consist in the transformation of the Glands, Nerves and Lymphatic Vessels, into a hard indissoluble uniform substance, which effect is produced by the cessation of the *filtration* of the part, and tho' at first, the Germen of the Cancer consists of a small induration, yet the obstruction gradually extending, augments the volume of the diseased mass.—But concerning the filaments attached to Cancer, which branch out into the neighbouring parts, he enquires "are they the roots of this malady, that like vene-

mous plants in the earth, suck this specific acid to the Cancer from the flesh." *

The treatment he recommends is palliative, as he thinks a cure seldom possible, because of the diffused depth of the roots, and not on account of a peculiar virus or acid as many then imagined—to the same cause he also attributes the difficulty of healing Cancerous Ulcers, as the fibres of the skin will not unite with those of the new formed mass.

On reading those opinions, we are struck with the near approaches M. Gendron made to the independent vitality of Cancer.

About the same period M. Helvetius published his observations, which assign the source of Cancer merely to the coagulation of a small drop of humour in a gland, extravasated by the effect of some external violence; and its growth he attributes to the frequent addition of a similar humour coagulating with the first: but to account for the succeeding pain and Ulceration, he is obliged to adopt the customary hypotheses of Leaven, Effervescence and sharp Humours.

Extirpation is recommended as the only cure for a confirmed Cancer, but at the beginning he

* Vide Enquiries into the nature and Cure of Cancers, by M. Deshaies Gendron, *p.* 6—26.

says it is so inconsiderable a disease, that it may be easily removed, by dissolving the small portion of humour, then but imperfectly coagulated or consuming it by Escharotics. But I fear this advice can afford but small advantage, as the Patient at this early period must be ignorant of his danger. The discovery that it might derive its origin from an external accident, was however advancing a considerable step at a time when it was universally considered a constitutional disease.

## SECTION II.

### OPINIONS OF THE MODERNS.

IF we derive but little information from the Ancients who attributed the origin of Cancer to imaginary sources, the Moderns bestow as little satisfaction, by ascribing it to causes evidently insufficient to its production, and which point out no rational method of cure. Thus Boerhaave supposes Cancer to arise from the excitement of vessels surrounding a scirrhus, and this last he attributes to whatever inspissates or coagulates the juices in a gland. Hiester assigns the same origin to both scirrhus and Cancer, viz. inspissation and coagulation of juices. Le Dran imputes it to the obstruction of one or more glands, which he says only produces a scirrhous tumour as long as the fluids remain unaltered, but as they become vitiated the tumour degenerates into a Cancer.

Færon attributes the origin of this disease, simply to obstruction of the Glands, Lymphatics or Lactiferous tubes, which having become impervious adhere together.

But it would unnecessarily consume time to recount the names of Authors, who have transmitted to each other opinions similar to those just mentioned,* which neither point out any rational cause for the painful progress and incurable nature of the disease, nor the extraordinary alteration in the structure of a part afflicted with Carcinoma. However Doctor Darwin's opinion is too singular to be omitted: he observes that "After the absorbent veins of a "gland cease to perform their office, if the "secerning arteries continue to act some time "longer the fluids are pushed forwards and "stagnate in the receptacles or capillary ves-"sels of the gland, and the thinner part of them "only being resumed by the absorbent system "of the gland, a hard tumour gradually suc-"ceeds, which continues *like a lifeless mass*, till "from some accidental violence, it gains *sensibi-"lity* and produces Cancer or suppurates."

* I have done great injustice by omitting in the text, one modern Author, who has dissipated every doubt, which embarrassed this subject, by informing us that *Cancer* "is of "an *obscure* or what may be termed the *Carcinomatous* "*inflammation.*"

*Vide Doctor Will. Nisbet on Cancer*

It may however be objected that Cancers occur in other parts as well as glands, that they often make their appearance without being preceded by a hard tumour, and it remains to be explained by what process accidental violence can produce sensibility in a lifeless mass.

An Hypothesis which assigns to Cancer a life independent of the part in which it is situated has been proposed by several, but with great diversity of opinion respecting the mode or form in which it enjoys this separate existence. n the Bibliotheca Anatomica, published in the year 1600, we are told that many were of opinion that it resided in a multitude of small worms which in ulcerated Cancer could be easily discovered by the microsope. Justamond in his treatise on this disease, supposes that it is formed by insects, the Germina of which are imbibed from the air by lymphatic vessels, and that while they remain in an inanimate state, the scirrhous tumour is free from uneasiness and pain, but an *accidental violence*, bringing them to life quickly induces the ulcerated state of the disease. He was led to this conjecture from observing, that the absorbents were most numerous in those situations where Cancer usually occurs, by which structure the Germina of insects floating in the air, would be more readily absorbed; that the pain " peculiar to Cancer favours the notion of insects corroding the part," and he

supposes that arsenic would destroy the animalcula of Cancer, as sulphur poisons those which Lewenhoeck proves to be the cause of itch; every insect having its peculiar bane.

He informs us that he is not singular in his idea of Cancer, for that in one of the volumes of tracts collected by Mr. Bell, he found it introduced as a received opinion in various parts of the Continent. Dr. Mosely relates in his work upon Tropical diseases, that at the Bay of Honduras a true Cancer, which is called the Bay-sore is endemic, and that the Indians say, it is produced by a large fly depositing its eggs in the flesh.

Theories founded on such uncertain arguments scarcely deserve attention, only that they prove how frequently the symptoms of this disorder have given the notion of its production by the action of living animals. They seem to have nearly dropped into oblivion, till revived by Doctor Adams, who supports with much ingenuity and appearance of truth, opinions peculiar to himself on this subject. As the foundation of this theory, he premises, that Hydatids possess the simplest form in which animal life can well be supposed to exist; and as the experiments of Doctor Hunter only prove in them a contractile force, which is allowed to be sufficient evidence of their life; so if a similar property can be proved in the contents of a

Cancerous tumour, *their* separate vitality is equal ly deducible.

In Cancerous Breasts he remarks there is always found a quantity of *yellow greenish fat*, which is contained in Cysts, these together he denominates Carcinomatous Hydatids; and to prove their contractile power, he directs the following experiment to be made. "Immediately "after the operation take the amputated part, "and cut it in a transverse, or indeed in any di- "rection, and wherever you discover this fatty "appearance, you will see the surface at first "smooth under your knife. In an instant after "you will find a papillary appearance all over this "yellow green surface. Each of these Papillæ "you will find the contents of a Capsule, the "contraction of which has produced this coni- "cal figure."

The other observations in support of his theory, chiefly tend to prove that those parts usually affected with Cancer, are endued with but little powers of life; and which therefore we would à priori, suppose to be best adapted for the nidus and support of beings possessing a seperate existence. Among those are the organs subservient to the preservation of the species and not necessary to the existence of the individual, as the Breasts and uterus in women

and the testicles in men which are most susceptible of the disease at that period of life, when they become useless, and consequently possess but a small portion of vitality; however that the Cancerous predisposition may be anticipated by injuries, which render them entirely or in part, incapable of performing their usual functions.

As to the scirrhous structure which forms the most considerable portion of Cancer, and possesses somewhat the appearance of softened Cartillage, he argues, that "If Carcinomata pass "through the same stages as Doctor J. Hunter "has remarked of the common or lymphatic "Hydatid, is it not probable that on the death of "any of them suppuration will follow, and that "this suppuration may expose the living Hydatids in such a manner that many of them may "die from not being surrounded by living animal matter? To prevent this, he conceives "a Fungus is formed, which incloses individuals "or clusters of them in separate compartments, "so that the death of one set produces no effect "on the rest." However the Doctor does not inform us whether this Fungus is produced by the Hydatids for their own preservation, or by the surrounding parts, for the purpose of preventing the departure of those troublesome visitors; if the latter is the case, it at least proves, that we do not

always profit by the assistance of the Vis Medicatrix Naturæ.

But when the mind rests a length of time on any favourite theory, it is too apt to seize only the evidence that may confirm, and to neglect altogether that which may subvert the opinions it has formed; thus the ingenious Author, who has the merit of opening a new field of enquiry, overlooks some obvious circumstances, that are strongly adverse to his theory, which appears to me to have its foundation in the following circumstances, viz. the colour, the quantity and the consistence of the yellow greenish fat above taken notice of, together with its accumulation in Capsules, and the papillary appearance expressive of motion observable on dividing it by a transverse section.

But these appearances seem to be merely the effects of the deranged actions of the animal œconomy; except the one evincing a contractile power in what he terms Capsules, but which notwithstanding repeated investigation, I never could perceive. The colour of the fat in Cancerous Breasts, that Doctor Adams seems to lay so much stress on, may be produced by animal hepatic air, which Doctor Crawford has proved to be " capable of imparting to the fat of animals recently killed a green colour," and that

this very air united with ammonia escapes in great abundance from Cancerous as well as other malignant Ulcers. *

It may possibly be objected, that as in occult Cancers, this air is not separated, the greenish colour of the fat remains unaccounted for; but whoever has examined one after extirpation, must have perceived the peculiar fœtor of the disease, arising from the Hepatised Ammonia, almost as distinctly, as if it had even proceeded to Ulceration. Its great quantity and thin oily consistence I would not attribute to any peculiar organization, but to a diminished action in the absorbents; which as in dropsy and similar diseases first cease to perform regularly their office, while the secerning arteries possessing the principle of life in a greater degree continue to act with more of their former vigour—this also appears to be the principle from which that obesity arises, so frequent in advanced age.

* Experiments and observations on the matter of Cancer, &c. by A. Crawford, M. D.

*Vide Duncan's Med. Comment. for* 1791, *p.* 150.

Hiester appears from the following remark, to have well understood the nature of the discharge from Cancer, "verum similior existit carnibus vel sponte putrescentibus, vel "a sphacelo corruptis, aut febre quadam maligna defunctis "in quibus vero omnibus nullum sal acidum, sed potius alcalicum, septicum, putredinem celerem inducens, contineri & reperiri, non solum chimia, aliisque indiciis atque "experimentis deprehensum est."

*Halleri disputat Chirurg. Tom.* ii. *p.* 517.

As to the cells in which this substance is deposited and which seem so strong, that without breaking them, their contents may be dug out, they appeared to me on dissection, to be common cellular membrane, partially supported by the roots of the Carcinomatous substance, which extend themselves in all directions into the parts like radii from a Centre—this substance having to me more the appearance of the roots of a plant penetrating where there was least resistance, than of Loculamenta containing a liquid —but with every attention, I could not discover the papillary appearance from which Dr. Adams deduces the proofs of the contraction and the evidence of the life of Cancer. However if any motion should be observed by future investigators, the vitality may be attributed with as much reason to the cartilaginous as to the pituitous substance.

## CHAPTER III.

### *INQUIRIES INTO THE NATURE OF CANCER.*

I HAVE thus extensively considered the opinions of Doctor Adams, which notwithstanding the objections that occur, appear to explain the Phenomena of the disease more satisfactorily than any that have yet been offered; and I confess I cannot but agree with him, in the fundamental part of his theory, *the independent life of Cancer*, but my sentiments are somewhat different concerning the part in which that life is resident.

I have already given some of my reasons, for not conceiving the fatty substance of a Cancerous Breast, with its containing cells to be endued with a separate existence, and I shall now offer those, that induce me to attribute it to the substance resembling Cartilage, with its annexed

bands or roots, which I conceive to be the essential part of Carcinoma, from its being always present in Cancerous Tumours in every situation; to maintain the truth of which, I need only add to my own observation, the highly respectable authorities of Doctor Bailie* and Mr. Abernethy.—To which I may also join the testimony of an old author, before noticed, M. Gendron, whose observations have the greater weight, on account of the particular attention he paid to this disease; he informs us that during eight years dissection of Cancers, he always found in those of the Breast, Womb, Nose, Eyes, Ears and Skin, a substance of an uniform nature, *resembling tender horn*, but that this substance, "which is essentially the very Cancer itself, was "of a different configuration according to the "place where the Cancer was situated."†

That an apparently irregular and inorganized mass should possess a vital independent principle, is a position not easily digested by any understanding; yet prejudice is daily losing ground as our experience increases, and on a close inspection we find, that the substance of Carcinoma,

* Vide in Bailie's Engravings of Morbid Anatomy, Plates illustrating the structure of Carcinoma of the Stomach, Testicle, Uterus and Ovarium, in which are delineated, "strong membranous septa," intersecting in various directions the Cancerous tumour.

† Vide M. Gendron on Cancer, p. 27—28.

though irregular, is not that confused indistinct assemblage of various parts, of which it is generally thought to be composed.—" In the female breast, and elsewhere, Mr. Abernethy observes, that Carcinoma commences in a small spot, and extends from thence, in all directions, like rays from a centre—that firm white bands like thickened and compact cellular substance, as the disease advances, are seen to extend themselves from the original tumour, amidst the fat in which it is occasionally imbedded."*—It is unnecessary to adduce any farther authority concerning the structure of Carcinoma, its commencement and mode of augmentation; but in the many opportunities I have had of examining this disease, the appearances exactly coincided with those described by Mr. Abernethy.—Those white bands extending themselves into the surrounding parts, which every operator is so careful to extirpate, without leaving the smallest portion, may be easily traced through the Fat, to their detachment from the original tumour, from whence their dimensions gradually taper like the roots of a tree.—If the fat be entirely taken away, nothing will remain but the original hard peculiar substance, with those connected bands or roots which seem to extend themselves in that direction where they meet with least resistance, and avoid the pectoral muscle,

* Abernethy's Surgical Observations, p. 68—78.

though they pierce the fatty substance of the Breast, at a greater distance from the original tumour.

It is well known that cavities, containing a fluid, are frequently found in Carcinoma. In my former edition I mentioned, that in those I had an opportunity of examining, they were never absent, but my succeeding experience enables me to state that they are sometimes wanting, though they are in general to be found in the Carcinomatous structure. Doctor Bailie says, "that from his observations, he should be inclined to believe, that Cysts are only sometimes formed in a scirrhous structure, but are not essential to it," but expresses a doubt, that "he may be mistaken, and that it might be found by a more minute observation, that the formation of Cysts always constitute a part of a scirrhous structure."*

Mr. Burns of Glasgow says, that small cavities may be observed in different parts of the diseased mass, "which are filled with a serous fluid, and the sides of which are firm and hard like Gristle; these enlarge gradually, and new ones form, so that were we to cut the gland we should find it containing a great number of these

* Letter from Doctor Bailie to Doctor Adams—vide Adam's observations on Cancerous Breasts, p. 33.

cavities.—Those which are nearest the surface of the *gland* generally enlarge most; and sometimes only one gains any considerable size."—He adds "that these cavities, which he also calls abscesses (for what reason it is difficult to determine,) are never found wanting in a *cancerous gland*, and when they are not present, we may be certain the tumour is a different kind of scirrhus;*" so that we may at least conclude from the opinions of these different authors, that cavities, containing a clear serous fluid, are in general to be found in the Carcinomatous structure.

In fine, it appears that Carcinoma is composed alone of a peculiar substance, apparently gelatinous, but unlike any thing in the body, commencing in a point, and gradually increasing, most frequently forming cavities in its structure, and shooting out roots into the neighbouring parts; which though necessarily affected by the proximity of such extraneous Mass, are not to be considered essential to its formation, but rather as a nidus contributing to its production and increase.

A close analogy between the functions of Animals and Vegetables is universally admitted—the derangement of those functions constituting

* Burns on inflammation, Vol. ii. p. 433,—6.

disease, must therefore have an equal resemblance; and our countryman Doctor John Gahagan, has fully demonstrated this conclusion by experiments and observations, which evince that the accumulation and exhaustion of irritability in Plants, are effected by the absence or presence of their accustomed stimuli, and may be productive of diseases similar to those of Animals depending on the same causes.*

The facts in Doctor Gahagan's Essay, have since been more extensively considered by Dr. Darwin, in his Phytologia, in which an intimate analogy is also traced between the disorders of Plants and Animals. For in the former as well as in the latter, there are diseases depending on exhaustion or accumulation of their vital powers, which explains why tender plants in spring are frequently destroyed, when a freezing temperature at night succeeds an unusually warm day; and why the same occurrence takes place when plants are subjected to a great increase of heat, after exposure to a low temperature; in either case death being produced, in the first instance by direct, and in the latter by indirect debility.

Plants are also subject to a variety of other

* See an account of Doctor Gahagan's observations on the irritability of vegetables.

*Duncan's Med. Comment. for the year* 1789, *p.* 379.

diseases, which closely resemble those of Animals, and have been named from their analogy, Diabetes Mellitus, Anasarca, Chlorosis, Verminatio, Tabes, Hœmorrhagy either spontaneous or accidental, Ulceration and Gangrene. They are subject, like Animals, to diseases, induced by accidents and other external causes, and like them are often destroyed by poisonous substances, either taken in with their nourishment from the soil, or respired by their leaves, as is often instanced in plants in the neighbourhood of those manufactories which emit noxious exhalations.

But the disorders of Plants and Animals in no instance bear a more striking resemblance, than in the effects consequent to the depredations of *Parasites*, which, altho' perhaps shewing scarcely any characteristic of life, produce in each of those great classes, diseases of a most incurable nature. Plants are subject to both animal and vegetable Parasites. The former produce upon Plants a variety of excrescences where they deposit their eggs, as is seen in the galls of oak, the contortions of chickweed, speedwell, and the scales of firs, willows and roses. But it is to the vegetable Parasites I would particularly call the attention; these Parasites are fungi, the lowest order of Plants, which are produced upon those parts of vegetables, *whose organization is injured*, and from their living powers being destroyed,

are in a state of decomposition. A few examples of this fact are given by Linnæus, in his Philosophia Botanica, as the Erysiphe, a white mucor or mildew which overspreads the leaves, and penetrates with its roots the vessels of the plants where it is found. He also notices the Rubigo and Clavus, Fungi destructive to corn; and Mr. Lambert, in the Transactions of the Linnæan Society, Vol. iv. describes another, which he terms Uredo Frumenti, or blight of wheat, a fungus which covers the stems of that plant in wet seasons, when it is nearly ripe, so as to give the field an appearance of being covered with soot. Sir Joseph Banks has further elucidated this subject, by demonstrating that the Blight in Corn is occasioned by the growth of minute Parasitic Fungi, the seeds of which it is presumed, gain admission by the means of Pores, which exist on the straw, leaves and glumes.—They germinate and extend their minute roots into the cellular substance beyond the bark, whence they draw their nourishment, by intercepting the sap, that was intended for the use of the grain. And Wildenow mentions a disease, which he terms Lepra, that is thus described in the words of his translator: " Old trees have their trunks full of Algæ, without suffering in the least, provided the smaller branches be free of them. But if young trees or shrubs grow in too sterile a soil, or in too thin a stratum of fertile soil, or in gravelly soil;

in improper situations, the ground being either too moist or too dry, and the Plants, against their nature, too much exposed to the wind, then they sicken, their bark cannot perform with proper vigour the functions peculiar to it as the skin of the tree, and they grow at last, even at their young boughs, all over with fungi of all kinds—vigorous plants therefore, though their close neighbours, will have few or no fungi on their stems. The Lepra increases sickness in plants, and they die at last of a decay, if not cleared of the fungi all over their Cutis, and transplanted in better situations and more proper soils."*

How numerous then must be the different destructive species of this class, if we consider that those only are noticed, which affect the Plants, that necessarily interest our attention.—Darwin supposes that the most simple animals and vegetables, may be produced by *the congress of the organic particles*, during the decomposition of animal and vegetable matter, without that which can be properly termed generation.† But his opinions on the subject appear to me to be so consonant to truth, and so curious in themselves, that I should deem it inexcusable to satisfy myself with an extract, when in so nar-

* Wildenow's Principles of Botany, p. 344.

† Vide Darwin's Temple of Nature—additional note iv.

row a compass I can detail them in his own words. "There is no absurdity in believing that the most simple animals and vegetables may be produced by the congress of the parts of decomposing organic matter, without what can properly be termed generation, as the genus did not previously exist; which accounts for the endless varieties, as well as for the immense numbers of microscopic animals.

The green vegetable matter of Dr. Priestly, which is universally produced in stagnant water, and the mucor, or mouldiness, which is seen on the surface of all putrid vegetable and animal matter, have probably no parents, but a spontaneous origin from the congress of the decomposing organic particles, and afterwards propagate themselves. Some other fungi, as those growing in close wine-vaults, or others which arise from decaying trees, or rotten timber, may perhaps be owing to a similar spontaneous production, and not previously exist as perfect organic beings in the juices of the wood, as some have supposed In the same manner it would seem, that the common esculent mushroom is produced from horse-dung at any time and in any place, as is the common practice of many gardeners."

We find in the preceding pages, a most perfect analogy to subsist between the disorders

of Plants and Animals, particularly with respect to the depredations of Parasites. But we must allow that they bear no proportion in animals, to the numberless varieties which affect the vegetable kingdom, altho' from their nature we should, a priori, suppose (if we acknowledge Doctor Darwin's doctrine of spontaneous production to be just) that they are much more liable to this cause of disease than vegetables: for animal matter, it is well known, runs far more quickly into decomposition than vegetable, and is therefore more liable to produce parasitic, the lowest order of living beings.—This greater degree of changeableness of animal matter, is owing to its more complicated composition, for to the number of the principles of vegetables, namely, Carbon, Hydrogen, and Oxygen, there is in animals the addition of Azote, Sulphur and Phosphorus; which addition enables modern chemists to explain the more easy decomposition or changeableness to which animal matter is subject, by calculating the multiplicity of attractions to which this number of principles gives rise. We find indeed in the vessels of the superior animals possessing red blood, a peculiar salt of Iron (which we shall consider more largely hereafter) that is capable of destroying the lives of the simpler animals possessing colourless blood; but notwithstanding this evident provision of nature against the production of Parasitic animals, by furnishing every part with an antidote

against their production, we find that those *superior* animals possessing red blood, are not altogether exempt from the depredations of Parasites, and this may be owing either to a *deficiency of oxide of Iron in the blood; an excess of inflammable principles, capable of keeping that metal at a low degree of oxygenation;* or to *incipient decomposition of any part, from injury to its organization or deficiency of vital powers.*

The Parasites infesting animals in general, it is unnecessary to notice: those which are peculiar to man, may naturally be subdivided into three genera.

The first, comprehending many species of Pediculi, generated on the external surface of the body, and whose locomotive powers enable them to pass from one person to another—among which we may probably include the insects of Cutaneous diseases.

Vermes generated on the internal surface of the body, form a second genus, whose nidus is commonly the intestinal Canal, and more rarely the Uterus*, Bladder † and Nasal sinus; where

* Stalpartius Vander Wiel, relates a case where a large worm had been discharged from the Uterus, and gives the testimony of many Authors of the frequency of this occurrence. *Observat.* 29.

† Nicol. Tulpius, gives us an instance of a worm discharged from the Bladder. *Lib.* ii. Cap. 49.

they live and propagate their species but are incapable of transporting themselves from one body to another*.—They do not enjoy an equal portion of life, for the Ascaris Lumbricoides, is capable of exerting a brisk serpentine motion, is oviparous and enjoys distinct sexes ; while the Tænia, only possesses an undulatory motion, which commencing by the contraction of the first

* In the Philadelphia transactions *Vol.* i. *p.* 60, Doctor John Capel of Wilmington, relates an extraordinary circumstance—that on dissecting several Rats, he observed tubercles in the Liver, on opening which, worms of the Tænia class were discovered coiled up, one of which was sixteen inches in length.—And a similar case is related by Doctor John Clefane in the London Medical Observations, *Vol.* i, *p.* 68, of a man who long suffered violent pain, in the region of the Liver, and got immediate ease by discharging per anum, an annular worm of considerable length ; however, he shortly afterwards died hectic.—On dissection, a large cavity was found in the Liver, containing two quarts of a fluid ; the hepatic duct communicating with this cavity was so large, that a tallow candle could be passed through it.—The Author supposes that, the worm when small, passed from the Duodenum into the Liver, where it supplied itself with nourishment from the surrounding parts. The Guinea Worm which infests the natives of Tropical Climates, has its nidus in any part of the body, but most frequently in the flesh of the lower extremities. Notwithstanding the attention that this Worm has of late excited, it still remains a perplexity in what manner it is generated ; and there have been various speculations concerning the mode in which the Animal, or its Eggs find admission into the human body, altho' no such animal was ever discovered out of it. These instances prove, that Parasitic Animals may draw their subsistence from the solid substance of the Bodies in which they reside.

joint, and followed successively by the succeeding ones, seems more to serve the purpose of conveying food along its alimentary canal, than to be productive of locomotion. The sex is hermaphrodite, and so low is its degree of life that Linnæus has arranged this species amongst the Polypi, asserting "that it grows old at one extremity, while it continues to generate young ones at the other, proceeding ad infinitum, like a root of grass. The separate joints are called Gourd Worms, and propagate new joints like the Parent, without end, each joint being furnished with its proper mouth and organs of digestion."

But Hydatids a still lower species of Animalcule form the third genus, and have indiscriminately their nidus in various parts of the human body, and shew so little any properties of life, that *its* presence is only inferred from the near resemblance they bear to the Hydatids of Quadrupeds, which have been observed to move when put into warm water; and also from a contractile force, which is evinced by the quick expulsion of their contents on being punctured by an instrument*.—They are, however, capable of generation, and multiply by solitary re-production; for their young, not larger than pin heads, have

* In Mihle's abridgement of the Philosophical Transactions may be seen Cases illustrating the presence of Hydatids in the Abdomen, Intestinal Canal, Uterus, Bladder and Neck.

been discovered in clusters attached to their interior surface.

Thus perceiving that the chain of Beings which draw their nourishment from man and other animals, descends from gradation to gradation, it may be asked do Hydatids form the last link of this chain—the analogy between animals and vegetables would lead us to suppose the contrary; and it may yet be ascertained that the peculiar firm gelatinous mass, with cavities containing a clear fluid in its structure, which we have found Carcinoma to be, and which commencing in a point, extends itself by its branches or roots like the Polypus, into the neighbouring parts, belongs to this inferior order; tho' it possesses so low a degree of vitality*, as merely to be entitled to the term Animal Fungus; this appellation will less shock our prejudices in considering a Being that bears as little resemblance to superior animals as the Agaric does to the Oak, by which it is nourished.

* The principle of Life, Mr. Hunter observes, may exist without matter being in a state of action, and only evinced by the property of self preservation, preventing decomposition.—Thus a new laid Egg is alive, though its life is demonstrated by no kind of action; and he proves by experiments, its possession of a power of retaining its proper temperature, by resisting to a certain degree the extremes of heat and cold, a power alone peculiar to life.

*Hunter on the Blood, p. 78—Lectures, M. S. S.*

## CHAPTER IV.

### EVIDENCE OF THE INDEPENDENT VITALITY OF CANCER.

THE Vitality of Cancer is not a conjecture resting on analogy alone, but an opinion, strengthened by many striking and I would almost say conclusive arguments, which may be drawn from the known Phenomena of the disease and the remarks of observing writers on the subject.

I. The substance resembling softened cartilage with its cavities and annexed roots, which I conceive alone to form Carcinoma, has no connection, by communicating vessels, with the parts in which it is imbedded; it is insensible, and strong-

ly resembles the gelatinous texture of the Polypus and other Zoophytes.

1. In numerous instances, some of which are already related, I had an opportunity of examining the structure of Cancer, in every one of which, whether in the Face, Nose, Lips, Breast, Uterus, or any other part of the body, it was found to be composed of a substance, alike in all. It is difficult to describe its precise appearance, and I believe it has not as yet undergone chemical examination; but from its structure, I should judge that it is composed of Gelatin. It appears, as Dr. Bailie has remarked, somewhat like softened Cartilage, but I would be more inclined to compare its general appearance to softened intervertebral substance, than any thing else.

The Cancerous mass, as I have stated, has no connexion by communicating vessels, with the parts in which it is imbedded, an opportunity of proving which was afforded by Case XLV. p. 184, in which it is stated, that altho' fine injection was used, no ramifications were found in the Carcinomatous substance, altho' they were numerous in the surrounding parts. Trunks of Arteries, such as the Labial, inferior Maxillary and Temporal were visible in the midst of it, but this could only have happened by the gradual extension of the Cancer, involving those vessels in its progress, a circumstance which was further

exemplified by a case of a Woman, whose Arm I had occasion to amputate in November, 1808, on account of an extensive Cancerous Ulcer, which engaged the entire Fore-Arm, and had destroyed considerable portions of the Radius and Ulna. On examining the parts after amputation, I found that the Carcinomatous substance which commenced in the middle of the Fore-Arm, had extended upwards along the greater part of the inside of the Arm, and that the Brachial artery pursued its course through it, without suffering any apparent injury of its coats, or diminution of its canal. But in making sections of the Carcinomatous mass in this, and a great variety of other dissections, I could never perceive that any ramifications were denoted by dots of red blood, as would have been the case if furnished by vessels containing red blood; and it is evident, from a number of circumstances which I shall detail, that the cancerous mass could not be a secretion deposited by these vessels, or that its increase or nourishment was at all owing to them.

2. The insensibility of the cancerous substance I have found in so great a variety of cases, and publickly proved in the Hospital of the House of Industry, that I think it unnecessary longer to dwell upon the subject; but I should mention, that by insensibility I mean the incapability of the Cancerous Mass to convey the impression of

any stimulus to the sensorium of the Patient. But if the mass itself is possessed of independent life, and may be esteemed an additional link in the class of Zoophytes, it is probably endued with sensibility and irritability in the same degree as other animals of this order, whose uniform gelatinous structure, M. Cuvier, in his comparative anatomy, supposes to enjoy both these faculties, without having peculiar organs adapted for the purpose.

II. Carcinoma arises either in parts naturally endued with a small portion of life; or in those which from their very nature are more inclined than others to run into decomposition; or in Scirrhi, those morbid indurations of parts which are doubly liable to form Cancer, from a combination of these two circumstances; or where the organization is injured by frequent stimuli, or violence; and particularly when these causes concur with advanced age and diminished powers of the system; all circumstances which we would a priori, suppose to favour the lodgement and growth of Animalcules in the body, and most of which are known to precede the appearance of Parasitic Fungi in the vegetable kingdom.

1. That Cancer arises in parts naturally endued with a small portion of life, is so obvious a fact, that it is scarce necessary to repeat it.—Thus the Breasts, Uterus and Ovaria of Women, and

the Testicles of Men, are most subject to this disease, at that period of life, when their vitality is necessarily diminished, by their being no longer capable of performing the functions, for which they were intended; and therefore become useless appendages to the system. This remark is farther strengthened by the observation of every writer on Cancer, Modern as well as Ancient, that old Men, Women that continue long single, or who are barren after Marriage, are most subject to the disease*.—And I may also add as another reason, why Female Breasts are so often the seat of Carcinoma—that though possessing a considerable portion of Nerves, they receive very few Arteries; their structure being chiefly composed of Lymphatics, whose proportion to the blood vessels M. Richerand computes as eight to one—their vital powers must consequently be low, as it is generally allowed, that the vitality of any part, bears a direct proportion to the number and capacity of its blood vessels.

By *vitality* I understand that power which is the cause of the preservation of the body, or any part of it from dissolution, by preventing those spontaneous changes to which dead animal

* Hiester observes that this circumstance has been noticed by all medical writers. "Illas ordinarie Cancro affici, quæ vel steriles sunt licet in matrimonio vivant, vel quæ omnino cælibes existunt."

*Halleri. disput. Chirurg, v.* ii. *p.* 515.

and vegetable matter is subject. When therefore there is a dearth of this power, there will be a tendency to decomposition, and that event is naturally followed by the developement of new forms of existence.

2. Cancer is so very frequently found in glandular parts, that it is generally looked upon as a glandular disease, altho' at the same time, it is acknowledged that every part of the body is liable to its attacks. It is a fact that has probably come within every persons observation, that the putrefactive fermentation commences in Glands, after death, sooner than in any other part of the body, on which account the Lips and Breasts become discoloured and putrid after death before other parts. This rapid tendency to putrefaction is well known to victuallers, who take care to remove certain glands shortly after the slaughter of a Beast, in order to prevent the more speedy approach of this change. It is true the Abdomen becomes also quickly discoloured after death, but this circumstance arises from the putrid contents of the Intestines.

We see then that those parts which are most frequently affected by Cancer are from their very nature more prone than others to run into decomposition, a fact which should particularly engage our attention, as it seems to be evidently connected with, and to precede the production of the

carcinomatous body; for we often find that Cancer is merely the consequence of external violence, which injures the organization of those glandular parts, and that too in a Person and at a period of life, when no predisposition to the disease can exist.

Since then we find that Carcinoma arises from a mere injury to the organization of those parts, more predisposed than others to decomposition, the same effect we may conclude will take place if that vitality which prevents the changes, to which organized matter is subject, should from any cause be diminished, so far as that incipient decomposition may commence; for in a part thus verging to the state of dead animal matter, the *animal Fungus* Carcinoma may naturally be produced in a manner precisely similar to the generation of inferior animals and vegetables, which start into existence during the decomposition of organic bodies, as explained in the last Chapter.

In *thus* considering the nature of Carcinoma, it seems to arise in perfect obedience to that general law of nature, which causes the production of a new organized body from the fresh combinations of the Particles of another in a state of slow dissolution or chemical decomposition, when assisted by the two great promoters of life, *heat and moisture.* I say slow dissolution, because where chemical decomposition of organized mat-

ter is rapid, Fungi, those simple, spontaneous productions of nature, do not seem to arise, but are every where observed to start forth, upon the decaying surfaces of living Plants and Trees. This fact I do not attempt to account for, but it affords a satisfactory answer, if it should be asked, why does not Cancer arise whenever mortification takes place?

It is remarkable, that Women far advanced in years, as well as those who are young, are not so subject to Cancer, as at that period of life when the sexual organs become unfitted for the office for which they were intended*. The attacks of the disease are so common at the time this change is taking place, that M. Dionis observes, that of twenty Women afflicted with Cancer, fifteen will be found to be aged from 45 to 50. There is probably a sudden diminution of vitality in the Breasts and Uterus at this period, which may occasion part of an extensive organ to run into decomposition before the absorbents are capable of removing such particles as are loosened from their old combination, and ready to form new ones.

* Hiester guessing at the reason why Cancer should occur so frequently in the Breasts of Women, says "forte quia sunt substantiæ variisque injuriis externis, internisque expositæ, vel forte quia singulare *cum utero*, ut multi auctores observarunt, *fovent commercium*."

3. The cause of the diminution of life in scirrhus*, is well described by Wiseman in his prognostick of the disease; he remarks that "the true or exquisite scirrhus being altogether *without sense*, admits of no cure. The reason is, because the induration of the part is so great, that it will not open to receive the free afflux of blood into it, but keeps its own hardness in despite of all applications, and thereby the use of Medicaments is rendered ineffectual.—The imperfect scirrhus which hath *some sense*, is not incurable, but yields by resolution; though very often it terminates in a Cancer†"

In a part thus insensible, admitting of neither suppuration nor absorption, and which is gradually becoming unorganized and verging to the state of dead animal matter, its vessels being nearly obliterated, Cancer frequently makes its

* The term Scirrhus I would confine to a simple induration of parts, and not apply it to that tumour, in which a gelatinous substance resembling softened cartilage is produced, which I conceive to be the distinctive mark of Carcinoma.

† See Wiseman's Surgery, *p.* 91.—These observations however are chiefly taken from Galen, who says "Exquisitus schirrhus est tumor præter naturam *sensu privatus*, durusque: non exquisitus vero non omnino insensibilis est, difficulter tamen omnino sentit. Scirrhus igitur insensibilis curam non recipit: qui vero difficulter sentit, nec incurabilis est nec facilem curationem admittit.

*Gal. Meth. Med. ad Glaucon, Lib.* ii. *Cap* v. *Tom* 3.

appearance. In such a part it is reasonable to suppose that decomposition begins probably in its centre, and that Carcinoma is produced in the manner already mentioned with respect to glands; and since in other situations, we know that it arises in a point, and extends from thence in all directions like Radii from a centre, the same law we may confidently presume is observed in those Cancers that arise in scirrhi.

4. Every part of the body is liable to this disease; we need not therefore be surprised at its frequently attacking the stomach, which tho' naturally possessing the highest vital powers, is peculiarly subject to have its organization injured, by the frequent application of the most powerful stimuli. Doctor Bailie observes "that Carcinoma of the stomach commonly arises at an *advanced period of life*, and that it is encouraged and brought forward *by intemperance*; but supposes that there is a considerable predisposition of the parts towards this disease."* This predisposition of the parts conjectured by Doctor Bailie may be owing to a great tendency to decomposition in the numerous mucous glands with which the coats of the stomach are furnished. The debility and loss of vital power in a part affected by the constant irritation of a bad ill-conditioned Ulcer, in a similar manner ren-

* Vide Bailie's Morbid Anat. p. 142.

ders it a fit nidus for the production and lodgement of Carcinoma: thus may be explained why a disease not originally cancerous becomes so in its progress, as instanced in old venereal buboes.

5. Most Practitioners have *observed* Carcinoma to be frequently the consequence of external violence, yet seem to doubt the cognizance of their own senses, on account of the implacable nature of the disease, which they could not think capable of being produced by so simple a cause; but the fact is established by the important testimony of Mr. Home in his excellent practical work upon Cancer, which contains many important cases illustrating the history, and many phenomena before unnoticed of the disease. I shall make frequent references to his facts and observations, as they confirm my opinions, without suspicion of being bent to meet them; I shall not therefore dwell on the cases related in the beginning of this work, affording so many instances of the disease originating in external injury, but shall take the liberty of quoting the following passage from that accurate observer, which not only establishes the point I mention, but also that Cancer is a local disease. "From the facts that have been "stated in the preceding cases it appears that "Cancer is a disease which is *local in its origin.* "This point I shall therefore assume as ascer-"tained, and proceeding one step further, shall

" endeavour to establish a second point, which " is, that cancer is not a disease which imme- " diately takes place in a healthy part of the " body, but one for the production of which it " is necessary that the part should have under- " gone some previous change, connected with " disease.

" In proof of this, I need only adduce the " two first cases in the present volume,* as they " appear to me the most clearly made out, of " any that I have seen; and having such " grounds to set out with, this opinion be- " comes very materially strengthened by the " innumerable instances, which occur in prac- " tice, of a pimple, small tumour, or wart upon " the nose, cheek, or prepuce, remaining for " ten, fifteen, twenty, or thirty years, without " producing the smallest inconvenience; but, at " the age of 60 or 70, upon being cut in shav- " ing, bruised by any accidental violence, or " otherwise injured, taking a cancerous dis- " position."

* To those who have not Mr. Home's valuable work upon Cancer by them, it may be satisfactory to mention that the disease, in one of those cases, arose upon the Glans Penis, from a violent contusion of that part, and in the other it took place on the left foot, from severe pressure and pain, occasioned by wearing a tight shoe.

This previous change which Mr. Home, from his extensive acquaintance with the disease, conceives necessary to take place in a part, before it is fitted for the production of Cancer, and which, he observes, is often effected by contusions, is apparently the incipient decomposition of its structure, from the injury its organization has suffered, not however extending as far as mortification; for contusions of themselves, we know, are not sufficient to produce Cancer, if not followed by some intimate change in the part. Persons most subject to Cancer, have an unhealthy, pale, sallow countenance, often inclining to a livid hue, and the period of life when it usually occurs is 45 and upwards, but the disease not unfrequently takes place at an earlier period, and in persons of an appearance directly contrary to that described. When this is the case, I will venture to affirm that in every such instance the disease has arisen from external violence, and of all the cases which occurred to me, that of Teresa Travers (case XII. p. 42.) most illustrates this position. The disease arose after a violent contusion on the seventh or eighth rib, in a part not predisposed like the lips, breasts, and uterus, to the production of cancer. She was a woman of a healthy florid complexion, and of great irritability of fibre. She had frequent and severe shooting pains in the part injured, for two years before the time she perceived any hardness or lump, and then it was the size of a nut;

but it is most probable that the formation of the Carcinoma preceded, or at least was coeval with the lancinating pains, though it was so diminutive, and slow in its progress, that it had escaped her observation.

This instance demonstrates that Cancer may arise from contusions, which injure the organization of a part not apt to become cancerous, and in a person, and at a period of life, not in the slightest degree predisposed to the disease. But we discover that even when it is formed under such circumstances, it is remarkably slow in its progress, unlike the rapidity exhibited in those who possess the true cancerous predisposition, marked by a pale, livid countenance, and little irritability of fibre. To elucidate this position, let us compare the slow progress of the disease in this case, and also in Mary Judges' (case XIII.) with its extraordinary increase in cases XLII. and XLIII. In the two former the cancerous mass had not arrived, in three years, to the size of a wallnut, while in the latter, in scarce as many months, its bulk became enormous, engaging the entire breast, and extending upwards above the clavicle, and backwards even on the dorsum of the Scapula.

Cancer then, whether it originates from debility, diminished vitality, or violence, has its proximate cause in the incipient decomposition

of the part where it arises, but that decomposition not extending to mortification; but which on the one hand is the effect of diminished circulation, and on the other, the consequence of the destruction of the organization of the injured part, in each instance equally offering a nidus for the lodgement of independent beings. It is scarcely necessary to remind the reader that Hydatids in the abdomen and other parts, have been the consequence of external injuries. And that the origin of intestinal worms, still wrapt in the darkest obscurity, affords a strong presumption that many of the most simple orders of animals are spontaneously produced, and gradually assume a more organized state, but still multiply without sexual intercourse.

III. In open Cancers, a similar process is observed, as when an exfoliating bone, or other extraneous matter is lodged in a part, from which the efforts of nature are incapable of expelling it, and after suppuration has failed of its usual effects, *a vascular fungus* shoots out, which in part encompasses the foreign body, and renders it more permanent in its place.

It has been remarked by Mr. Hunter, that living animals do not stimulate to suppuration the parts in which they are situated; but when they die, the same effect is produced as by other extraneous substances, as is well known in warm

climates, where the Guinea worm penetrates the flesh.* It therefore follows that suppuration, in this disease, can only take place, where a portion of the Cancer is deprived of its vitality. I say portion, because if its independent life be granted, we may presume, that Carcinoma like Tænia, may die in one part while it is generating in another; particularly as we observe, that large white sloughs are thrown off in open Cancer, which are most probably the dead parts of the Carcinomatous substance.

But so similar is the Fungus produced by an exfoliating bone, to that produced by Cancer, that I have known instances where the diseases were mistaken for each other. The Fungus which appears in open Cancer is soft and vascular, and bleeds upon the slightest irritation; it is easily distinguished from the hard Carcinomatous substance by its inferior degree of density, but is not so easily distinguishable by colour; for the white Carcinomatous substance, unless in a state of slough appearing through the vascular network of vessels spread over it, has an appearance somewhat resembling the Fungus.

* "The Guinea worm, called Vena Medinensis, is also a striking instance of this, for while the animal is endowed with the living principle, it gives but little trouble, yet if killed gives a stimulus of an extraneous body, which produces suppuration through its whole length."

*Hunter on the Blood, p.* 208.

When Ulceration appears there are sufficient grounds to believe that a portion of the Carcinomatous substance is deprived of life; and in giving the stimulus of an extraneous body to the surrounding parts, causes them to inflame and suppurate, in order to expel such portions as are dead. Ulceration therefore may be regarded as an effort of nature to rid itself of the disease, a position which is illustrated in many of the cases I have related, where we find that in persons possessed of considerable powers of life, and the resources of whose constitution were unimpaired, Ulceration succeeded before the Cancerous tumour had acquired the minutest portion of the magnitude it attained in those of a debilitated worn out frame. These facts will be found on a comparison of case XVI. with cases XLII. and XLIII. In the two latter notwithstanding the extent of the Carcinoma, there was not to the last the slightest sign of Ulceration, and I believe none would have taken place, if the Carcinoma had extended to every part of the body, so little was their constitution adapted to oppose the progress of the disorder, or make any effort to throw it off. Nor is there a case I have detailed of Cancers of the lips, face and other parts of the body where the circulation of the blood is strong, and the powers of life vigorous, that Ulceration did not quickly arise; in the face in general before the Cancerous mass was larger than a pea and elsewhere before it was the size of a

wall-nut: but in the Breast, Uterus, and Testes parts most frequently attacked by Cancer when their vitality is diminished, and they are no longer capable of performing the functions for which they were intended, the extent of the cancerous mass is infinitely greater before any effort is made by nature, to get rid of it by Ulceration.

When Ulceration has taken place so as to destroy the integuments covering the Cancer, that portion of the Carcinomatous substance which is dead, separates from the living in white glutinous sloughs resembling the cores, which are found in abscesses when first opened.

The deadened portion of the Cancer being thrown off, the surrounding soft parts shoot out vessels which inclose the remaining substance. The production of these vessels seems to be an attempt of nature, to heal the part and render perfect the continuity of the surface, which frequently takes place, tho' the cancerous body remains underneath. But more frequently these vessels form a highly vascular Fungus full of blood, *whose* colour we must not forget is owing to the Iron it contains, and to the very salt of that metal by so many experiments proved to be the strongest antidote against Parasites.* But too curious and fine drawn indeed, would be the observation, that the acrimony of the cancerous discharge corrodes this net-work of vessels and

* See Chap. vi. on the uses of Iron in the system.

causes an effusion of a fluid, that nature seems to have provided with a remedy fitted to resist those assailants, in consonance with the principle by which organized bodies spontaneously oppose by their own internal resources whatever tends to their injury.

From many observations I have made, this vascular production seems to be formed in greatest abundance when by the sloughing of the Carcinoma, one or more of those cavities which are found in its substance have opened, from which is poured out in an incredible quantity, a thin discharge of a peculiarly offensive odour; in some cases the quantity was so great that the bed cloathes in a single night were actually drenched before morning.

These conjectures respecting the retardation of the disease are somewhat strengthened by the following practical remark of Mr. Home. "It "is a peculiar character of Cancer, when the "original disease has once arrived at the state of "an open sore, not to continue to make pro-"gress as it did before, but often to remain "for months, and even years, with very little "apparent increase, although the disease is "making rapid advances in those parts "which have been contaminated from it. "This circumstance is fully proved by the first "case, where the disease in the glans Penis "became as it were dormant, while the ravages

" committed in the groins were extremely vio-
" lent. I have frequently seen exactly the same
" thing in the Breast. In one case the Ulcer in the
" Breast when last examined, was neither so
" large or so painful as it had been six months
" before, the edges having skinned over, and
" being more turned in than they were at that
" time."

IV. The origin of Carcinoma first commencing in a point—the formation of Cysts in its texture, containing a fluid—those Cysts evincing a contractile power, by a forcible expulsion of their contents on being punctured, are all circumstances which strongly impress the idea that Carcinoma is possessed of individual life.

1. The origin of Carcinoma in a point intimately resembles the incipiency of an animal and not a diseased alteration of structure. This fact has been mentioned by almost every Author. Wiseman says for instance, " If a *scirrhus* be the *original* disease of the part, and not the *effect* of some other, that hath been ill handled, it begins usually like a small vetch or pea, and by degrees increaseth without shifting or changing of place."* This comparison of the small extent of a Cancer, at its commencement, to a pea, is introduced by every Author who has treated of the disease, or stated a case of Cancer, and Patients

* Wiseman's Surgery, p. 91.

themselves usually make the same comparison when relating the history of their complaints. Mr. Abernethy observes that it may serve, as a good diagnostick symptom in doubtful cases. And M. Gendron makes a curious remark, that there is a strong analogy between the commencement, growth and texture of Carcinoma, to that of horns of deer at their first breaking out *—and it is not a little remarkable that M. Buffon says, that the horns of those animals are really "a vegetable production, and resemble a plant in their growth, ramification, solidity, drying and separation; for after acquiring their greatest density, they cease to extract nourishment and fall spontaneouly like a ripe fruit."†

The minute commencement of Carcinoma cannot very well be observed, when it originates in the centre of a Gland or Scirrhus, by which latter term I would always be understood to mean simply *an induration or thickening of the natural structure of the part*; but the smallness of its incipiency, in other situations, which afford us the opportunity of an early examination, sufficiently proves that it is not essentially a morbid alteration of the glandular structure. Most modern authors overlooking this circumstance, when speaking of Cancer, call it a cancerous

* Gendron on Cancer, p. 53.

† Buffon's Natural History, Vol. iv. p. 98.

gland, as if these organs, and these alone, were affected by the disease, and seemingly forgetting that it is common in those parts of the trunk and extremities, where no glands occur, or Lymphatic glands only, which are seldom or ever primarily affected by Cancer: and that the Uterus, an organ so void of glands, is its most common seat, while the integuments, and even the muscles, are not exempt from its attacks. These considerations, the want of any analogy or resemblance between cancer and scrophulous and other affections of the glands, and the peculiarity of the cancerous structure, strongly evince that cancer is not a glandular disease, but affects those organs in common with other parts of the body, yet more frequently in consequence of their superior tendency to decomposition.

2. Were Cysts containing a fluid always present, and essentially a part of the structure of Carcinoma, as supposed by many observers, it would not be incongruous to place this animal Fungus endued with independent powers of growth and existence, above the Polypus in the scale of Animated Nature, as in that case it would be a step nearer to a more organized state and a more perfect degree of animality.

The simplest idea we have of an animal is afforded by the Polypus. This Being spreads out branches roots and bulbs like a plant, and like a

plant is propagated by seeds; it may be multiplied by dividing it, each portion becoming a distinct individual, and parts of different individuals may be united to each other, and when thus grafted are as perfect as any other Polypi. The Hydatid is perhaps the next acknowledged link in ascending the scale of animal life. This parasitic being which has its nidus in the bodies of more perfect animals, is a mere membranous or muscular bag, containing a fluid which it expels forcibly on being punctured, a circumstance deemed a sufficient proof of its independent contractile power. But Carcinoma like the Polypus appears closely allied to the nature of vegetables in spreading out roots and branches, which sprout with greater vigour the oftner they are cut; and like the Hydatid whose powers are still more of an animal than vegetable nature, its cavities contain a fluid which they are capable of expelling with a force that can scarcely be owing to the simple elasticity of their walls when over distended, their ligamento-gelatinous structure appearing to possess of all substances the least degree of elasticity. The force with which the fluid contents of Hydatids are expelled has been thought sufficient to establish their right to the appellation of animals, and if the same quality is found to exist in Carcinoma, it seems to be equally entitled to the distinction.

I had more than once an opportunity of observing the contractile power of the Carcinomatous Cysts: but as those who have not witnessed the fact, will be pleased with a corroboration of my assertion, I shall recite a passage from Le Dran, who endeavouring to demonstrate the infectious nature of Cancer, accidentally mentions a strong proof of the contractile power of those Cysts—he relates "that in the middle of a Car-" cinomatous tumour extirpated by his father, " there was a Cyst filled with a fluid, which he " opened, and part of its contents *spurting out* " upon his cloaths, destroyed the colour of " them, as if it had been Aquafortis—some of " it *flew in his face* and he felt continued shoot-" ings there several hours, though he immediately " washed the part."* A similar circumstance happened to myself. About two years ago a Cancerous enlargement of the Testis was removed by Mr. Piele at the Hospital of the House of Industry. After the operation it was carried to the Anatomical Theatre to be examined before the Pupils of the Hospital. The greater part of the diseased mass was formed of sacs containing a clear serous fluid, but the centre of the tumour was composed of Carcinomatous subtance, from which issued bands of the same nature, spreading through a white pulpy mass resembling the brain, and terminating in the walls of the

* See Le Dran's Surg. p. 289.

Cysts. Or in other words the Cysts were formed by a continuation of the firm Carcinomatous substance, while the white pulpy mass appeared to be the remains of the Testis in a diseased state. On making a small opening into one of the Cysts its contents suddenly spurted into my face, with considerable force; however I did not like M. Le Dran feel any shooting pains afterwards, altho' one of my eyes into which it flew smarted not a little, and I believe I was as anxious as that gentleman to wash off the offending matter with all convenient dispatch. I have witnessed other instances of this expulsion, and am satisfied that the strong force with which these Cysts expel their contents, is not owing to their excessive repletion, but entirely to the action of fibres endued with a contractile power. Such a power even in a smaller degree is esteemed sufficient to establish the animality of Hydatids generated in the human body, and on the same grounds I repeat the vitality of Cancer may likewise be inferred. It may however be said that any part of the human body will even after excision have a similar, though not so forcible a power of contraction—to which I have nothing to reply. I therefore lay no great stress upon the present argument, but leave it weakened as it is by this objection to add what corroboration it may to my other inductions.

Instances of Cancer assuming the more regular form and organization of Hydatids, are by no means uncommon. As it must be allowed in such cases either that Carcinoma retaining its nature, wears the appearance of Hydatids, or that Hydatids becoming more inveterate produce the very symptoms and phenomena of Cancer, and it cannot always be easy to draw a line of distinction between the one and the other.

A case is related in Doctor Hamilton's work upon Cancer, which affords an example of the near approach that Carcinoma often makes to the Hydatid form. The commencement and progress of the disease resembled Cancer in every particular, the tumour when first observed being the size of a pea, but at the time of the operation had increased to that of an egg. I shall give in his own words the appearances on examination. "Upon cutting it asunder to examine its structure, it was found to consist of several coats, with a fluid between them and adhering to each other in different places, the external of which was of a callous hardness more than one eighth of an inch in thickness, the rest were neither so hard nor so thick as this, and within the innermost there was near an ounce of Lymphatic liquor." In the sequel of the statement we find that in the scar left after extirpation another tumour appeared, and that the Patient at length died of the disease. Altho' in this case the regular figure

of the tumour resembled that formed by Hydatids, yet the thickness and hardness of the coats evinced that it greatly partook of the Carcinomatous structure and character, and from the return of the disease I would conclude that it sent out roots into the neighbouring parts, which were not extirpated with the central tumour. But in Mr. Homes' valuable record we find two cases of *Hydatids in the Breast, the symptoms of which exactly resembled those of Cancerous tumours, altho' their coats were thin and membranous*, and such as are found in the common simple Hydatid in other situations. The subject of the first of these cases was a young Lady, 20 years of age, who in getting upon her horse accidentally struck her Breast on the projecting part of the saddle—which was followed by severe pain. She had occasional uneasiness afterwards in the part, but no tumour could be felt on examination. In three years the uneasiness increased and more frequently returned—a small tumour was then felt under the finger, *of the size of a small pea.* The pain became more constant and she applied to Mr. Home at the end of the fourth year to have it removed. At this time, below the nipple about the distance of an inch, there was a *small hard moveable tumour*, not larger than a full sized glass bead, and no other disease whatever which could be discovered. In performing the operation, the tumour seemed to be so moveable that it was difficult to fix it so as to determine the situation

of the external incision. After dividing the external skin, the tumour with a part of the gland of the Breast was removed, and on examining it, he found the outer surface polished and *loosely connected with the surrounding parts.* Its colour was a dark purple ; its size that of a grape. On opening it the contents were a bloody serum, the coat *a thin membrane imbedded in the gland of the Breast.* The surrounding gland was unusually compact, but in no respect appeared diseased ; so that the tumour (Mr. Home continues) was nothing more than a small Hydatid—situated in the gland of the Breast, near its external surface, *formed in consequence of the blow,* upon the projecting part of the saddle. Mr. Home then proceeds to conjecture that probably some blood was originally effused and coagulated there, and when this was absorbed the surrounding substance of the gland being too compact to collapse and fill up the space, a watery fluid was deposited. But with great deference to Mr. Homes' opinion I should be inclined to suppose, that Hydatids like Cancer, arise from an injury to the organization of the part where they appear, whose decomposition and not the effusion and coagulation of blood produces the disorder. And even if such effusion and coagulation did take place, still the soft yielding glandular substance of the Breast would most probably collapse and fill up the space, from which the coagulum was slowly absorbed, with-

out leaving room for the deposition of a watery fluid, that even if deposited would be more likely to be absorbed than the Coagulum it succeeded.

Nor can I on Mr. Homes' principles account for the small tumour which when first observed, felt under the finger like a small pea, or for the thin membranous coat of the Hydatid, which we are expressly told was *loosely connected with the surrounding parts*. For if it was produced, as Mr. Home supposes, the tumour when first noticed would be much larger than a small pea, and the substance of the gland of the Breast would itself form the Hydatid by supplying the walls of the cavity containing the watery fluid, and consequently the coats of the Hydatid or *Cancer*, (for it was attended with the symptoms of the latter) must have been closely attached to the surrounding parts, and not loosely connected with them as he describes.

The second example of this disorder attended with the symptoms of Cancer, was the case of a Lady, 52 years of age, who unexpectedly discovered a tumour two inches above the nipple of the left Breast, about the size of a nut, which does not appear to have been preceded by any injury. Its size afterwards increasing she became alarmed and sought for medical advice.

Mr. Home and Mr. Cline determined in consultation, to remove the diseased parts by operation. The Tumour was extirpated with some of the surrounding Fat, and a portion of the Gland of the Breast, with which it was connected.

Upon examing the part after its removal, they were much astonished to find that it was a Cyst, containing a clear Liquid, the membrane composing the Bag, not thicker than the finest Cambrick, and the surrounding Gland not in a diseased state, but unusually compact, from having been compressed by this Hydatid.

Mr. Homes' attention in these two cases is occupied in an endeavour to ascertain whether they afford any proof that those cavities that are so frequently met with in the Cancerous structure, and which he terms Hydatids, are complaints superadded, or whether they form a part of the Cancer itself, which he esteems a poisonous disease, but I hope, before the conclusion of this Chapter, to adduce satisfactory evidence, that no part of the Cancerous mass is poisonous; by which I mean, that it is neither capable of communicating the disease from one person to another, or of contaminating the general habit.

I shall now quote a case published by Dr. Reece, of Hydatids in the Uterus producing symptoms exactly resembling those that would attend

Cancer of the Uterus :—" A Lady, aged 45, " had been afflicted three years with great pain " in the region of the Uterus, she had menstru- " ated very irregularly, and had latterly been " much troubled with Fluor Albus, the Cervix " Uteri appearing to be Scirrhous, and her gene- " ral health much impaired; the Oxy-phosphate " was administered in the manner suggested by " Mr. Carmichael. When she had taken this " preparation a week, her health began evident- " ly to improve, and after persisting in its use " ten days longer, she was seized with great " pain in the region of the Womb, *similar to* " *labour*, which was in a few hours followed by " a discharge of Hydatids, amounting nearly to " three quarts. The Hydatids continued to pass " with the Hœmorrhage for some days, but on " account of slight Fever, she discontinued the " use of the Oxy-Phosphate of Iron 'till it sub- " sided, when, it it was re-administered; she " now enjoys a good state of health, and free " from any Uterine affection."* In a letter with which I was favoured by Dr. Reece upon this interesting case, he states, " that when he first " examined the Patient, he concluded that her " sufferings arose from incipient Cancer, there " was a *slight enlargement*, and very *considerable in-* " *duration* of *the Os Uteri*, with *a fœtid discharge.*

* See Dr. Reeces account of the Rhatania Root, to which the above statement is subjoined.

" Her health, he conceives to be re-established, " but, whenever she has any pain in the region " of the Uterus, to which she has long been sub- " ject, she has always recourse to Pills of the " Oxy-Phosphate of Iron, which she says allays " the pain immediately."

The Cases comprehended in this Section, afford us no small insight into the nature of those complaints, and I persuade myself that they furnish the following conclusions:

1. That the Cavities in the Carcinomatous structure have a power of contraction similar to Hydatids, from which circumstance, there is as much reason to infer the independent vitality of the one as of the other.

2. That Carcinoma appears to have a tendency to assume the Hydatid form and character, so that it is in some instances difficult to distinguish the one from the other, and I hope it will not seem too speculative, to observe, that this disposition appears to be a step to a more organized state, or an attempt at a more perfect degree of animality. Dr. Darwin notices, in various parts of his works, a similar disposition in the inferior animals and vegetables, and conjectures, that all the productions of Nature are in their progress to greater perfection.

3. That Hydatids and Cancer are alike in their origin, for they may either spontaneously arise, or be the effect of accident, which injures the organization of a part. From the two cases related by Mr. Home, it appears that the one which occurred at an early period of life, when there is not a predisposition in the body to produce Cancer, or other Parasitic Beings, was preceded by accident, and the other, which spontaneously arose, occurred at a time of life, when the predisposition did exist.

4. It appears that Hydatids, which are acknowledged to be animals, produced the same train of symptoms as Cancer.

5. That Ferruginous preparations, which in numerous instances have relieved the pains of Cancer, and caused the Cancerous substance to slough and separate from the body, produced the same effect upon Hydatids in the Uterus, which were thrown off by pains resembling Labour.—We have already stated that the same pains occurred in Cancer of the Uterus,* whenever the

* See Case XXI.—Another Lady whom I am at present attending, had those pains constantly for three Weeks, during which time, a large quantity of decayed substances, passed from the Uterus, and the pains ceased after the expulsion of a greater quantity than usual. This Lady mentioned, that the pains she felt, exactly resembled those of Labour, and were even preceded by such sickness of her Stomach, as she had formerly been accustomed to during Labour. I conceive

Carcinomatous substance was expelled in a state of slough, thro' the effects of the Salts of Iron, and it is to be recollected, that all those Salts destroy the lives of Intestinal and Earth Worms, and other animals, whose blood is colourless.

This strong combination of circumstances, without adverting to others, falls not far short of absolute proof of the independent vitality of Cancer.

V. The rapid growth of a relapsed Cancer, after operation, is a fact, which must have come under the observation of every practitioner. Dr. Monro, who particularly experienced the frequency of this occurrence, mentions, " that of near sixty Cancers which he had been present at the extirpation of, only four Patients remained free of the disease for two years. Three of these lucky People had occult Cancers in the Breast, and the fourth had an occult Cancer of the Lip*, and he even doubts the propriety of any attempt to remove it by Excision, observing that upon a relapse, the disease in those he saw was more violent, and made a much quicker progress than it did in others on whom no operation had

that that portion of the Carcinomatous substance deprived of life, gave the stimulus of an extraneous body to the Uterus, and caused those Labour pains, which ceased as soon as all the deadened portion was expelled, altho' the living part of the Carcinomatous mass remained behind.

* Monro's Work's, p. 490.

been performed. I can scarcely imagine, that this phenomenon can now induce any one to believe, that Cancer is a constitutional disease, arising, as the Ancients supposed, from a morbifick matter pent up in the blood, whose attack, if local, produced Cancer, but if more, general Leprosy : Altho' one modern of some weight, M. Le Dran, thought that a fluid capable of communicating Cancer was always floating in the system, which *some accident* deposited upon a glandular part. Such opinions require no other refutation, than the general practice of extirpating Cancerous tumours, which would be a proof of ignorance and folly in the extreme, if the tumour was believed to be a consequence of a constitutional affection ; for we might as well expect to remove a confirmed Lues, by extirpating an Ulcerated Tonsil, or an enlarged Lymphatic Gland, as to cure a Cancer by the extirpation of the Breast or Testis if the entire habit were engaged in the disease.

Was any further proof wanting to confirm the locality of Cancer, the knowledge that it is often produced simply by external violence in Persons, and at a period of life, when no predisposition to the disease exists, would be sufficient to establish the fact. But many are of opinion, that the frequent return of Cancer after operation, and its rapid increase is owing to the contamination of the system by the absorption of a specifick virus, supposed to be generated by the Cancerous

Mass, at a certain advanced period of the disease. This opinion is so very general, even with the most eminent and judicious Practitioners, that it demands particular consideration.

Mr. Pearson, in his excellent practical work upon Cancer, leaves this matter in doubt, and relates three cases taken from Wiseman, Sauvages, and Van Swieten, with the view of inviting the attention of others to the subject ; while it seems to be his own opinion, that the facts they contain in favour of this idea are of no small weight, and they cannot be thought weak or inapplicable, when selected by so discerning a writer. Let the Reader judge for himself—the following are the cases :

" A Lady of a scorbutical and ill habit of body had a painful Gland in her left Breast ; this was resolved by means of Leeches and particular ointments. Somewhile after she complained of pain in her Back, and passed Urine tinged with blood. This disorder of the Kidnies seems to be the only reason for imagining the system contaminated by a Cancerous Virus, as Wiseman, from whose works the case is quoted, attributes the symptoms to " a translation of some of those *sharp humours* that affected her Breast."

The case from Sauvages respects a Woman who had a Cancer of the right Breast, of the bulk of a Man's Head. During the progress of the disease,

she was attacked by a severe and fixed pain in the middle of the right Humerus. On examining the Arm after death, the Periosteum was found a little separated from the Os Humeri, at the particular point where she complained of the pain, and a drop of thin watery fluid was underneath it, but there was not any other sensible alteration. After this detail, Sauvages asks, whether the Cancerous Virus having been deposited upon this spot, had not eroded it? To which I think it may be answered, that if this drop of watery fluid was at all owing to the disease, it might be better accounted for by supposing that the Carcinomatous substance had extended from the Breast to this part of the Arm, and by rendering the Bone carious, produced the above mentioned effect; a conjecture by no means improbable, if we consider the great distance the Carcinomatous substance sometimes extends from the spot where it commenced.

Mr. Pearson, in support of the sentiments he seems to adopt, informs us that Bertrandi was of opinion, "that a Cancerous Breast ought not to be removed, when the Axillary Glands are in a diseased condition, because he apprehended that the humour might be translated to some more important part, more especially to the joints, where he had frequently seen it produce a dreadful *Cancerous Gout*, and that he met three instances of Women, whose Breasts were cut off, destroyed at length by a severe Gout, attended with a

contraction of the Limbs." An event there is no room to doubt, but which I believe at this day will scarcely be attributed to the cause assigned by Bertrandi.

The third case, which he quotes from Van Swieten, is of a Lady who died with symptoms of Cancer of the Uterus after both her Breasts had been taken off on account of the same disease. But we may take it for granted that the woman was constitutionally predisposed to the disorder, for its removal from one part by extirpation could neither prevent or induce its attack upon another.

Mr. Nooth however, who seems to have had great experience in this malady declares " that it appears to him that a schirrhus which might ultimately become a Cancer is a local complaint, but by a diseased progress, the habit may be contaminated from it."* Mr. Home is also of opinion that Cancer is at its commencement a local complaint, but that at some particular period which it is difficult for Practitioners to discover it generates a poison that contaminates the system, and concludes from Mr. Nooth's uncommon success by operation, that there is a stage in the disease, *before contamination takes place*, in which the operation will always be attended

* Nooth on Cancer, p. 29.

with success. But the only facts we find in support of this idea of contamination, is the frequent return of the disease after operation, and the propagation of Cancer by diseased appearances, " which when they approach the skin, produce in it small tumours of their own nature by a mode of contamination with which we are at present unacquainted."*

A very eminent Practitioner of this city to whose intelligence I have been very frequently indebted, seems also to countenance the same opinion. During our attendance on a Lady who died of an extensive Cancer of the Breast, he frequently observed during the latter stages of the disease, that her entire system had become contaminated or poisoned. In opposition to the opinions of those eminent Practitioners, I shall beg leave to recite the following words of Mr. Sharpe " whoever will make inquiry into " the history of Cancers, cured without relapses, " will find a greater proportion amongst such, " which were of many years standing, than " amongst those reduced to the operation, very " soon after their appearance; and if this obser- " vation be true, it proves at least, that the " danger which may accrue from the mere re- " sidence of a scirrhus, for a length of time, is " not of itself a sufficient motive for *Castration;*

* Home on Cancer, p. 146.

" indeed for my own part, I am so far from " judging unfavourably of a Cancer under this " circumstance, that I think we cannot have " better evidence of *its Locality*, than the little " injury it has already done to the constitu- " tion-"*

The facts stated here by Mr. Sharpe, are alone strong enough to incline us to adopt his opinion, that Cancer is incapable of contaminating the system; for I believe it to be generally the case, that in diseases which infect by a morbid posion, the constitution is the more deeply tainted, in proportion to the length of time it has acted upon it: and it is absurd and unsupported by any analogy to suppose that a disease, which is capable of generating a poison shall exist for years without injuring the constitution, and afterwards as occurs in many instances be totally eradicated by a knife that simply removes a single tumour.

The discharge from an open Cancer cannot be the inveterate poison it is supposed; for in every case of Ulceration, the system would soon become contaminated by the absorption carried on, where there is an extensive ulcerated surface. Yet even such Cancers have been removed by operation without a relapse. Nor, in considering a disease supposed to be capable of producing

* Sharp's Critical Enquiry, p. 106.

a specific virus, should we forget that while Ulceration hurries on Lues Venerea to its acmé, it retards as before remarked the progress of Cancer.

Pains in the joints may be very general and Nephritic and Dyspeptic complaints may occur with other signs of disorder of the system. Yet they should not be esteemed Cancerous, for Cancer will generate Hectic Fever, and Hectic Fever will produce pains in the joints and a variety of anomalous complaints, which tho' the effects of Cancer certainly are not Cancerous. Heberden gives his opinion on this subject in the following words:

"Besides the usual distress of a fever, the "hectic Patient is often harassed with pains like "those of the rheumatism, which either wander "through the whole body, or remain constant "and fixed in one part; and, what is rather "strange, often at a great distance from the "primary malady, and in appearance uncon-"nected with it. These pains have been so "great, as to make no small part of the Patient's "sufferings, and to be not tolerable without the "assistance of opium. They are chiefly obser-"vable, as far as I can judge, in those whose hec-"tic has been occasioned by Ulcers in the exter-"nal parts, as in Cancers of the face and Breast, "and in other places open to the outward air.

" In some few hectic cases it is remarkable that " considerable tumours will instantly arise upon " the limbs, or body, lasting only for a few hours, " without pain, or hardness, or discolouring of " the skin."

I imagine that the opinion of the generation of a morbid poison in Cancer, has been chiefly grounded on the frequent enlargement of the absorbent glands leading from the affected part, and the ill success of the operation, when that has been the case; however a few modern Practitioners have extirpated Cancers with success, though accompanied by this formidable symptom. Professor Richter of Goetingen mentions, that in two cases, where the axillary glands were indurated, the operation was successfully performed, and the induration afterwards gradually disappeared—he remarks that these affections of the glands often arise from sympathy, like buboes in Lues venerea, and do not always contra-indicate the operation. Mr. Nooth also, whose practice was so extensive, and whose observations so accurate, fully confirms this remark, by relating many cases, where he performed successfully the operation, notwithstanding that the lymphatic glands, leading from the Cancerous tumour were enlarged; and he at the same time, accurately discriminates these enlargements of glands which *contra-indicate* the operation from those in which it may *be effectual.* The latter, he

informs us, though enlarged, are *moveable* and covered by sound skin, but the former *are fixed in their situations*, and commonly accompanied by discolouration and hardness of the integuments.* But this state of the lymphatic glands which makes the operation dangerous, cannot arise from the absorption of a Cancerous virus; as we know, that the most virulent poisons may be imbibed, without producing the effect of fixing these glands, although capable of causing their enlargement; wherefore it must be the same causes that render the *Cancerous tumour itself fixed*, and the attempt to extirpate it so often ineffectual; namely, the extension of the *bands or roots*, we have so often mentioned; and which arising from the original Cancer, *penetrate* those affected glands, which are parts favourable to their growth, and necessarily *fix them* in their situations. To confirm this fact, I need only adduce the cases already related, in which I had an opportunity of ascertaining by dissection, the great extent of the Carcinomatous substance. In one case we find it proceeding from the Uterus into the cavity of one intestine, and enveloping another by a circular band. In another case it extended from the Breast, thro' the interstices of the ribs into the cavity of the chest. In a third it advanced from the lip to the very

* See Nooth on Cancer—Cases and Observations, p. 56, 79.

basis of the scull where it rendered the bones carious and affected the substance of the brain in such a way as to deprive the wretched Patient of his reason. And here it will not be amiss to recollect the circumstance which took place during the extirpation of the Breast, in case XL. where a thick root of the Carcinomatous substance was unexpectedly found to extend from the tumour of the Breast into the axilla, and this being cut across during the operation was heard to snap under the knife like a tight tendinous cord. This root or extension of the Cancerous mass which passed into the deepest part of the axilla, would have been termed by many a Cancerous gland, with what reason it is difficult to determine, for it did not bear the smallest resemblance to those organs but had much more the appearance of a band of Ligament. An instance of the minuteness and penetrating nature of these roots, is mentioned by Hildanus,* who states, that on examining a Cancer situated in the tongue, *its roots* could be felt *like threads* scattered in all directions thro'

* In extremitatis linguæ magis dextrâ parte, ineunte æstate, tuberculum valde exiguum ab initio erupit. Mox ad ciceris, postea fabæ tandem neglectum, ad castaneæ minoris, Majorisque quantitatem, absque omni dolore insigni tamen duritie, sensim excrevit; ita tamen, ut *fili instar* majoris hujus tuberculæ *radicem* per linguæ compresso substantiam ego cum chirurgo tactu sparsam deprehenderim.

*Hildani op Cent.* iii. *Obs.* lxxxiv. p. 264.

the substance of that organ. M. Gendron also gives the following curious testimony of this fact; in a Cancer situated on the forehead, to which he had applied an Escharotick, he perceived "*some white filaments;* laying hold of them with his nippers, he found them give way, and observed that they proceeded from several places, some coming from the part near the eye, others from the nose, while some again proceeded from the scalp even above the forehead, and appeared when taken out, like the roots of an onion"—the sore healed afterwards, by the use alone, of a common plaister. * And Mr. Justamond also examined a Cancer of the Breast, whose roots had extended into the cavity of the Thorax, and affected the internal surface of the Pleura. † These circumstances sufficiently explain, why the most extensive excision should so often fail of success.

The practical observation of Mr. Nooth quoted above, claims the greatest attention, in our endeavours to demonstrate the origin of Cancer; for by it, is explained a circumstance hitherto perplexing and contradictory, viz. the frequent return of the disease, when the operation had

* Inquiries into the nature knowledge and cure of Cancers by Deshais Gendron, p. 23.

† Justamond's Surgical Tracts, p. 376.

been performed, during the enlargement of the neighbouring lymphatic glands, although Cancer can neither contaminate the general habit, or generate a specific virus. I shall take the liberty of repeating some of his observations on the same subject which are equally valuable, in his own words, " Where the disease had long existed, I have frequently found portions of the tumour which presented a radiated appearance, which seemed to have been generated from the centre, and could be traced running in oblique directions to the surface, and am enabled to prove, by some scirrhous tumours which I have preserved in spirits, that *contamination is communicated to the integuments by those irradiations*," and in another place we find as follows, " on examining tumours which I had extirpated, I discovered a *radiated substance from the body of the tumour*, diverging considerably towards the integuments, which had produced a diseased action, attachment, discolouration, and at length ulceration."

I have frequently observed the skin affected in the manner stated by Mr. Nooth, and am satisfied of the essential advantage the Surgeon will find who is about to operate, in knowing when the skin is engaged in the disease; for this is frequently the case, altho' the integuments are not discoloured or fixed to the indurated substance

beneath. In cases XL. XLII. and XLIII. I have pointed out the appearances by which this circumstance may be known, the integuments being thickened and resembling those of a white swelling of the knee, and small bright white streaks, appearing on a closer examination thro' the skin, and which no doubt are the irradiations of the Carcinomatous substance mentioned by Mr. Nooth ;* but it is not a little extraordinary, that this gentleman who so accurately points out the cause of relapse after operation, should conceive that Cancer is capable of contaminating the system by absorption of a specific virus, or any other poison that can be supposed to arise from Cancer ; and that Mr. Home who established the locality of Cancer by proving its so frequent production by accident should entertain a similarity of opinion.

It is however a fact, ackowledged on all hands that an imperfect extirpation instead of removing the original Cancer causes a rapid increase of the disease, by creating as many germs as there remain sections of its branching roots ; in which circumstance it more nearly resembles the mode of propagation by which the Polypus and other animals of the lowest order are capable of being multiplied than the phenomena of an ordinary distemper.

* Nooth upon Cancer, p. 11—28.

These opinions are further strengthened by the consideration of the singular extension of the disease, which sometimes takes place by means of a chain of small hard tumours, which proceed from the Carcinomatous Mass, a mode of contamination with which Mr. Home remarks, " we are at present unacquainted, and which is totally different from that produced through the medium of the absorbent system." This mode, he, however illustrates by a case, which is too remarkable to omit here, as it explains the appearance, number and extent of those extraordinary substances.

" A Lady, about 58 years of age, had a tumour in the Breast, which had been gradually increasing in size for nine or ten years, and had affected the glands in the axilla, several of them being considerably enlarged ; but the tumour itself made slow progress, even at this period not shewing any disposition to break. But the remarkable circumstance was, that in the neighbourhood of the tumour, to which the skin firmly adhered, and had the tucked-in appearance, which is considered as one of the true characteristic marks of Cancer, there were several Cancerous tumours in the substance of the skin, about the size of small split peas. At the time I saw the patient they were not confined to the neighbourhood of the tumour, although about nine or ten months before they were only seen

there. They were now met with all over the body, not only on the same side with the diseased Breast, but on the opposite side, and on the back and shoulders. They were nearly of the same size in these different situations, but rather larger near the seat of the original disease. In no place were they close to one another, but commonly an inch or more distant. They gave a considerable degree of uneasiness, and her general health was very much impaired. The disease in the Breast had become extremely painful; her stomach with difficulty retained nourishment; and, occasionally, she had severe retchings to vomit: and in a few months died, without having any considerable change produced in the local appearances."

Mr. Fœron recounts an instance of Clusters of the same description in the Cellular Membrane. Having described the removal of a Cancerous Breast, and some glands in the Axilla, he proceeds, "I was very much alarmed to find that all the cellular membrane was diseased, and full of hard knots in every direction; besides those that were dissected with the Breast I removed an *incredible number* of them, from the size of a pea to that of a filbert; the edges of the wound were brought into contact, and healed in the usual time.*" But, as might be expected, the disease

* Fœron on Cancer, p. 102.

afterwards returned; it was again removed by operation, but repeating its attack, it at length destroyed the Patient.

I have selected these two examples because they exhibit the Cancerous Knots in numbers unusually great; but in the advanced stages of every Cancer, they are more or less to be found diverging from the original tumour, and are not in my mind the least frequent cause of the return of the disease after operation; an observation somewhat confirmed by Dr. Monro's remark, "that it does not always return to the part where the former tumour was taken away, but more frequently in the neighbourhood, and sometimes at a considerable distance.*

These extraordinary circumstances, I am afraid admit only of an extraordinary explanation; but the interpretation which occurs to me, is so much of a piece with the opinions I have ventured to support concerning this disease, and tends so much to confirm my obstinacy in them, that the only difficulty I shall have in expounding the matter is the manner of doing it, so as to convince the understanding before it is alarmed, and expose the truth as little as possible to the shafts of ridicule, 'till familiarity enables it to defy the test.

* Monro's Works, p. 490.

Were Cancer allowed to be an Animal Fungus, endued with powers of life, in the same degree as a Zoophyte, we should not be surprised to find it endued with the power of re-production, that grand distinction between animate and inanimate matter; because without that wonderful property, Carcinoma could not well be considered an independent, organized Being. But in order to form a just conclusion on the subject, it is necessary to consider the mode of propagation in the lowest order of animal existence with which we are acquainted, and with which we may suppose Carcinoma to be on some kind of equality. The Polypus *naturally* propagates itself either by the production of bulbs, below the surface of the earth, or the young ones branch out like the buds of Trees, and separate themselves from the side of the parent. The Tape worm which is composed of a series of separate beings termed Gourd Worms, all connected to each other forms a chain which frequently extends thro' the entire intestinal Canal, from the Stomach to the Rectum. Darwin compares it in its mode of propagation to the lateral production of plants by wires; each new plant being chained to its parent, continues to put forth another and another, as the wire creeps onward on the ground; a mode of propagation which is familiarly instanced in the Strawberry Plant.

Hydatids, which have their nidus in the differ-

ent parts of superior animals, are observed to have their young, not larger than pin heads, adhering to their inner coats.

So much for the progeny, but how the Parents were produced, no Naturalist has pretended to unravel. The Philosophy of the day is, that every animal must have had parents and progenitors ascending to the creation* ; but this

* It is most reasonable to suppose this true, so far as concerns those species that subsist unconnected with other animals, and whose production, either by sexual or solitary procreation, we can track from parent to parent, and ascribe to a long series of progenitors, without offending our understanding. But this is not the case with respect to Parasitic Animals, who are circumscribed within a little world of their own, and whose population, if ever so numerous, must be traced to the first founder of the family that sprung up without ancestors, as if newly created, amidst a Chaos of decomposed animal matter in the body, in which they subsist. It is, however, hard to comprehend how animals so well organized as Intestinal Worms, whose species are alike, wherever they appear, and in some of whom, particularly the Lumbrici and the Ascarides, adistinction of sexes has been ascertained, should have grown up to such perfection from such an origin. Yet if we could suppose it possible for the first of the race that appeared in the Intestines of any individual to have travelled thither in unboiled roots, fruit, or water, as in a vehicle, without any injury to its existence in passing thro' the Stomach, it would be still a mystery how a Worm could procure admission into the Intestines (*See Encl. Brit. article, Medicine, on the subject of Worms.*) of an Infant born dead, whose mouth never opened to receive nutriment of any kind. And when we reflect that these

fancy is flatly contradicted by the Hydatid, which seems to afford the strongest evidence that the lowest orders may be spontaneously produced, and that they afterwards acquire powers of propagating their species: for it would be absurd to suppose that the eggs or seeds of Hydatids were conveyed thro' the medium of the circulation to the parts where they are produced, but like Cancers they seem to be the effects of an injury to the organization of the parts where they are found; in confirmation of which there are several cases in the Medical Journals, of large collections of Hydatids, in situations where injuries had been inflicted, and most generally in the cavity of the Abdomen. But when one of those Beings is produced, a progeny quickly appears, and there is no end to the increase of the family.—Like the Hydatid, the Tape Worm and the Polypus, Carcinoma may have also its mode of propagation. *Tumours below the skin, about the size of a small split Pea,* remind us of the bulbs of the Polypus, below the surface of the earth. The young of Hydatids, *not larger than Pin Heads, ad-*

Worms do not or cannot any where subsist in nature, except in other animals, and that an individual or its germ would find as much difficulty in crossing the gulph between its original residence and another body, as an inhabitant of one planet to make a voyage to another, we are left without any other resource than the exploded system of equivocal generation, which I am afraid our philosophers, in spite of themselves will be obliged to revive.

*hering to their coats*, recalls our attention to the diseased cellular membrane, full of hard knots, and *the chain* of Gourds which the Tape Worm successively produces, forcibly impresses on our mind *the connection of tumours proceeding* from a Cancerous Mass, in all directions, and to an incredible distance. In every particular bearing a much closer resemblance than the Tape Worm to the Strawberry Plant, extending its radiations of Fibrillæ into the neighbouring parts, and by them disseminating the small Pea-like bodies, whose structure is of a similar nature to the original Carcinoma, and which, wherever they establish themselves, exhibit the growth, vigour, and destructive qualities of their parent.

To sum up briefly the facts contained in this Section, we find,

1. That CANCER is not a *Constitutional Disease*, nor capable of generating a specific virus, by which the system can be contaminated, or the disease imparted.

2. That in the greater proportion of cases, the disease returns after operation, in consequence of roots being left behind, yet that this remedy may be resorted to with success, altho' the axiliary glands should be enlarged, provided they are moveable.

3. That if these glands are *hard and fixed* in their situations, the disease will to a certainty return, their fixation being caused by the roots or radiations of the Carcinomatous substance.

4. That the Carcinomatous radiations and chains of knots penetrate the skin, and extend into parts at a considerable distance from the central substance, propagating the disease wherever they extend.

5. That when excision is imperfectly performed the disease returns with more violence, and proceeds with far greater rapidity than before the operation, the various sections of the roots becoming an assemblage of Cancers.

VI. Most writers take notice of the peculiarity and vehemence of the pain which attends this disorder commencing with an itching, and at length causing a lancinating sensation, that is often compared by the fancy of the Patient, to the gnawing of an animal. It is probably the best diagnostick symptom, by which we are enabled to judge whether Carcinoma has invaded a scirrhous tumour; Van Swieten impressing this opinion, enquires " how a scirrhus becomes a " Cancer, and by what symptoms they are to be " distinguished from each other; the first is a " hard indolent tumour, but when it changes " to a Cancer, the tumour remains and a pain is

" felt, which was not experienced before-"*— Hiester observes, that a hard rough unequal *painful* tumour, succeeding to an indolent scirrhus is termed an occult Cancer, but it is the pain alone which distinguishes it from scirrhus.† Sauvages says, that Cancer differs from scirrhus by its lancinating pain.‡ This is also the opinion of Le Dran, who says, that while scirrhi continue free from *pain*, they cannot be called Cancers; but if they become painful, we need not hesitate to give them that name.§ M. Alliot observes also that the redness, lividness, interspersed veins, and roughness of a Cancer are equivocal and accidental signs, but considers the lancinating pains as the *specific and individual* character of Cancer. Mr. Abernethy alone is of opinion that in some cases this distinctive mark of Cancer is wanting, but in the great multitude of cases I have seen there was not one in which this circumstance was not more or less evident,

* Van Swieten's Comment. vol. iv. p. 287.

† Occultus vocatur tumor durus, asper sive inæqualis, dolens scirrhum indolentem subsequens: *quo dolore*, a scirrho mammarum, qui indolens est distinguitur.
*Halleri Disput Chirurg. Tom.* ii. p. 513.

‡——Definitur tumor durus, tuberosus lancinans, pertinacissimus. *Differt a skirro perdolorem lancinantem*, superficiem inæqualem. *Sauvages Nosol. Tom.* ii. p. 43.

§ Le Dran's Surgery, p. 297.

and I am persuaded that that intelligent Practitioner must be mistaken in his observation. I should think it unnecessary to adduce any further authority, to demonstrate that a peculiar pain is always connected with Cancer, and serves essentially to distinguish it from those diseases with which it is liable to be confounded; yet I cannot but allow the impropriety of drawing conclusions from a symptom, so variable and indeterminate as pain; but when we combine this with other symptoms, and recollect how fruitless hitherto, every effort has been to account for this disease, or its unremitting accompanyment, we cannot but rest with some kind of confidence, on a simple explanation, that particularly embraces the most prominent feature of the subject; and perhaps would have removed those perplexities, with which it was regarded, by the discerning Hiester.*

I have now detailed all the evidence I can bring forward in support of the vitality of Cancer, and I cannot conclude the subject better than by collecting into one point of view a compendium of my proofs.

* Vehementes hi dolores, scirrhum mammæ subsequentes, *certissimum Carcinomatis signum* existunt. *Unde vero hi proveniant*, nondum adeo planum, aut perspectum est, sed *altioris*, ut mihi videtur, *indaginis adhuc* est, atque *inventu difficilimum*.

*Halleri disput. Chirurg. Vol.* ii. p. 517.

1. The substance of Cancer closely resembles the gelatinous texture of Zoophytes, it is in a manner insulated, receives no blood-vessels as a part of the body it subsists in, and whatever sensibility it may enjoy within itself, it conveys no impression of any outward stimulus to the sensorium of the person diseased.

2. It arises in parts endued with a small portion of life; or whose organization is injured by violence, where a dissolution of organized matter takes place, but not so rapidly as to prevent its recomposition in another animalized form.

3. As long as it retains life throughout its substance no Ulceration takes place in the surrounding parts, as is also the case with the Guinea Worm; but when a portion of it dies, the same effect is produced as by other extraneous bodies, and suppuration with all its concomitant circumstances is induced.

4. It originates like all incipient animals in a point; in its substance it forms Cysts containing a fluid, and evincing a contractile power like Hydatids, an acknowledged animal; it has a tendency to improve its animality and assume the Hydatid form and character; like Hydatids it arises spontaneously and from accident: they are both destroyed by the same preparations, and if this happens in the womb, they are alike

thrown off by pains resembling those of parturition.

5. It is not infectious, nor spreads by contamination like other diseases, but increases by extending its roots in all directions. It propagates, shall I say its *species?* by small pea like substances connected by fibrillæ, each of them an incipient Cancer capable of emulating the parent in bulk and malignity; in this circumstance resembling the natural mode of generation in the class of Zoophytes, and in other circumstances as in the growth of the intersected roots after operation bearing the closest analogy to the Polypus which it resembles not only in this artificial, but also in its natural mode of propagation.

6. The peculiar pain it creates is not common to itself and the surrounding parts; it does not feel but inflict: and while the fancy of the Patient compares it to the gnawing of an animal, it may in truth arise from the force of suction, by which this parasite draws its nourishment from the flesh in which it is imbedded.

Such are the facts, observations and conjectures that lead me to adopt the unnatural hypothesis that Cancer enjoys an independent animal existence in the body on which it preys, and when another theory offers itself that so pre-

cisely meets every circumstance, and so perspicuously disentangles every difficulty of this obscure and intricate disease, I shall without hesitation relinquish opinions that I confess are difficult to digest, and most difficult to him whose reading has been most extensive. Vain indeed would be any effort to render them palatable to minds versed in systems of every branch of philosophy if they had not previously learned the vanity of all human knowledge and the futility of attempting to embrace within systems the infinite variety of nature.

## CHAPTER V.

### TREATMENT OF CANCER.

THE Remedies palliative as well as efficient employed for the cure of Carcinoma, even afford a further presumption of its possession of independent life.

For the former, we know to be those only, which detract both *warmth* and *moisture*, the two great promoters of *Animal growth* from the nidus of the Cancer—and the latter are intended to remove it altogether from the body into which it has intruded.

Palliative remedies, which without arresting may perhaps retard the progress of the disease,

by lessening the force of the circulation, are catharticks and an abstemious mode of living—the former recommended by the Ancients, and the latter reduced so low as a water diet, advised by M. Pouteau, and put in practice with very beneficial effects by Mr. Pearson*.

The class of sedatives, which once bore a high character for the removal of this disease, but which are now generally allowed to be only serviceable in palliating its symptoms, may probably retard the circulation, by the powers they possess of enfeebling the sensibility of the nervous system, the prime mover of the entire machine; and by diminishing the pain, which would otherwise excite an increased vascular action, they produce a secondary good effect, but particularly around the diseased part.—To these causes, I am inclined to imagine, that Cicuta, Belladona, Hyoscyamus, Aconitum, Digitalis, Solanum Dulcamara, and the Lauro Cerasus, are all indebted for their Character; but as they have long since been discovered incapable of effecting a radical cure, I shall consider them no further.

In the 5th vol. of the Medical Essays and Observations, there are two cases of Cancer mentioned by a Mr. Love, to have been successfully treated by a decoction of Guaiacum Wood. One of these was an Ulcerated Cancer of the Breast, and in

* Pearson's Observations on Cancer, p. 113.

the other the disease was situated at the orifice of the Vagina. Four ounces of the raspings of Guaiacum Wood were boiled in six pounds of water, 'till they were reduced to four, and six pints of a decoction thus made, were taken daily for several weeks by the Patient, in whom it caused profuse perspirations. The remedy was also applied locally in the form of fomentation and powder.

I do not find Guaiacum mentioned as a cure for Cancer by any other writer except Mr. Pearson, who recommends a strong decoction of it as a local application in that species of Ulcer of the face, which, he says, "resembles the Cancerous Ulcer so much in its appearance and destructive powers, that a superficial observer might be easily misled." This Ulcer, Mr. Pearson denominates Elephantiasis, but I have already stated my reasons for conceiving it to be truly Cancerous*, and to the arguments already adduced in support of this opinion, may be added the fact, that the same remedies which are of service to this description of Ulcers of the face, as Hemlock, Guaiacum, Arsenic and Iron, are also found most beneficial in undoubted Cancers in other situations; a strong presumption that these Ulcers are also Cancerous.

* See page 105.

I know nothing of Guaiacum from my own experience as a remedy for Cancer, but it is evident from Mr. Pearson's account, that it deserves a further trial. Galium Aparine, Goose-grass, or Robin-run-the-Hedge is another remedy which has been greatly extolled of late for the cure of Cancer. It is recommended to be used both internally and externally—in the former the expressed juice is recommended to be employed while fresh, to the extent of half a pint in the day, but few Patients, will, I apprehend, be prevailed upon to take so nauseous a beverage, in so great a quantity, particularly as it is extremely apt to disorder the Stomach. The Plant itself beaten into a poultice is used externally: I witnessed its exhibition for a length of time with two Patients, in neither of whom it produced the least amendment.

The local means found serviceable in palliating this disorder, are also those which diminish the heat and circulation in the neighbourhood of the disease; as the frequent application of cold water, saturnine solutions, the detraction of blood from the part, and other remedies of the same class. So advantageous have these been sometimes found, as to give rise to hopes of their effecting a compleat cure, but I believe I have an opportunity of giving the public an instance of the utmost extent of their power, in a case in which I was consulted by letter from London.

Miss S———, received an injury upon her Breast which was followed some months afterwards by a hardness attended with frequent shooting pains; by the use of leeches, and purgatives, the shooting pains were immediately removed, and by a continuance in this treatment for several months, the hardness was so compleatly dispersed that no symptom of it could be discovered. But in a few months the hardness and shooting pains returned and the leeches were repeatedly applied but their effect gradually diminished. In this state she resorted to Bristol for the benefit of Mr. Allard's advice, under whose care the shooting pains by the same mode of treatment with the addition of cold applications, were alleviated, but the hardness remained stationary. I recommended the preparations of Iron—what benefit she derived from them or if any I am ignorant, but I had the pleasure of hearing in a subsequent letter that her disorder was considered not to be cancerous by Doctor Bailie and Mr. Home, in deference to whom I have not inserted it among my cases of that disease.

Almost every Author who has treated of Cancer has observed that an opposite mode of treatment consisting of a full diet, warm emollients and other stimulating applications, by increasing the heat and circulation of the blood, exasperate the disease and produce a rapid en-

largement of the Carcinomatous tumour. Boerhaave for instance remarks that " if the scirrhus is of long standing and appears to be malignant from its colour, hardness, roughness, itching and incipient pain, or if its situation, adhesion and the nature of the adjacent parts, in a person of a bad habit, render the extirpation of a *scirrhus* impossible, in that case every thing is to be carefully avoided, which increases the circulation of the blood, either throughout the *whole body or in the part itself*, to prevent the scirrhus from turning into a Cancer; hence therefore emollient suppurative, corroding and drying medicines are in this case prejudicial."

But other remedies have been found serviceable in ulcerated Cancer, as Oxygenated Muriatic Acid recommended by Doctor Crawford, on the principle of decomposing the discharge which contains Hepatised Ammonia. The good effects of Carbonic acid Gas, brought into notice by Doctor Ewart, may be accounted for, on the same principle; and the powdered chalk, which was lately the occasion of a separate publication by Mr. Kentish, I would suppose to be serviceable by absorbing the acrid ichor distilled from ulcerated Cancer.

But the means we have hitherto mentioned, are merely capable of retarding the growth of Carcinoma, and do not in the smallest degree

tend to free the patient from this dreadful disorder. And though Carcinoma has been supposed to consist of the substance of the body, altered by disease, yet no mode was ever discovered of renewing its healthy state, or of dissipating it by absorption; and from the most early accounts to the present time, extirpation alone, has been considered capable of affording a permanent cure.

The most general mode of extirpating Cancer is by the knife, which though undoubtedly the best hitherto discovered, is not as efficacious as might be wished, from the impossibility of the operator's knowing to what extent, the minute roots have penetrated, and the danger of a relapse, from leaving the smallest portion behind.

If we except the inhuman practice of burning by the actual cautery, which has been long since exploded, the treatment next in most general use has been the application of Arsenic, which is a remedy mentioned by most Authors in Surgery, and has had already the fullest trial in this disease. But we may conclude from its early use, if it had been effectual, its character would have been long since firmly established, and on the contrary, we may justly infer, from its still continuing to be employed, that this powerful medicine has not been altogether misapplied in the treatment of Cancer.

The peculiarity of its action is greatly deserving of attention, and I would say, affords another proof of the separate existence of Carcinoma; for when applied to the external surface, its action extends much farther than the part with which it comes in contact, and separates a considerable portion of the cancerous mass from the surrounding parts, in the same manner, Mr. Justamond observes, as " a nut comes out of its shell, or as if it had been cleanly dissected by a knife."* This peculiar effect of Arsenic has no analogy in the action of other Escharotics or even in its own action on other tumours, which producing superficial sloughs only destroy the parts, with which they are immediately blended, and their action is easily accounted for, on the general principle of chemical affinities; but the effect of which we are treating cannot be explained by the same laws, but I have been lately led to think that it arises less from the action of this deleterious drug on the Cancer than the parts which surround it. But were it established as a principle, that the disease must in the end give way to the powers of the medicine; the danger of administering the necessary quantities of this, the most violent poison, with which we are acquainted, must operate as a prohibition to its use, or we should too frequently see the Patient subdued by its effects before the disorder.

* Justamond's Surgical Tracts, p. 379.

Electricity has also been mentioned as a remedy, but I cannot conceive in what manner it can be of service, unless by passing strong electrick shocks through the Cancerous tumour, sufficiently powerful to deprive the Cancer of life, and consequently rendering it subject to be thrown off by suppuration. This conjecture is suggested by the power which lightning possesses of depriving animals and vegetables of life; together with the known efficacy of electricity in discussing scirrhous tumours, some of which probably were deemed not to be Cancerous, merely because they were capable of dissipation. Mr. Nooth, from whose practical remarks I have derived so much information, observes "that he had found Electricity of the most essential service in many cases which *had been declared scirrhous*, and that were he inclined to seek professional fame, by finesse, *he could adduce a mass of evidence in support of* this treatment."*

But among the extensive variety of medicines employed by the Ancients, for the cure of Cancer, which included almost all the articles of the Materia Medica, it is a little surprising, that not one of the preparations of Iron is mentioned; except by Fabricius, who recommends a very rude form of that medicine, viz. the powder that may be collected from grinding stones, upon which iron instruments have been sharpened—which he says, Avicenna advises as a local appli-

* Nooth on Cancer, p. 23.

cation to prevent the return of Cancer, by repelling *the humour*, and strengthening the part*—but among the moderns, I could only find this medicine taken notice of by M. Pouteau, and Mr. Justamond; the former recommends a solution of the metal, in a mineral acid, to be used both externally and internally, as a palliative remedy capable of correcting the Cancerous virus.—But Mr. Justamond without building his practice on any particular theory, or opinions of the nature of Carcinoma, was first induced to make trial of this metal, by the recommendation of an empirical compound of equal parts of Sal Ammoniac and Iron, in rectified spirit of wine, with the addition of oil of Vitriol and oil of Tartar, which was directed to be applied to the indurated edges of Cancerous sores—this extraordinary lotion he accidentally met with in one of the German Ephemerides,† at a time when he was considering the best mode of applying Sal Ammoniac to Cancers, on the principle of its "powerful resolutive properties,"—whatever virtues this application was possessed of, were evidently attributed by Mr. Justamond to the Sal Ammoniac, and not to the Iron, which may account for his not using the latter medicine in a more concentrated form. But he was so well pleased with the amendment produced

* Fabricii ab Aquapendente op Chirurg. Lib. i. p. 122.

† See a long account of the mode of preparing this application in Justamond's Surgical Works, p. 365.

by its application, that he determined on trying a medicine of a similar nature internally; and he accordingly administered the Flores Martiales, which preparation occurred to him, as most nearly resembling the composition of the external lotion. The dose of this medicine he was enabled to increase from ten grains to upwards of two drams in the day, and he relates several cases of Cancer, as well open as occult, which were either amended or dispersed by these remedies alone.

It appears evident to me, though perhaps others may think me too readily convinced, that the Sal Ammoniac, had no share in producing those effects, and that Mr. Justamond was indebted to the Iron alone for the cures he performed. And as it is natural to speculate on a favourite hypothesis, perhaps I may be indulged in the supposition that a preparation of this metal, formed one of the component parts, in at least some of those *secret* remedies, that have been celebrated for their beneficial effects in this disorder; particularly that mentioned by Van Helmont, "whose inventor sprinkled the Cancer with a powder which *gave no pain*, and afterwards healed the part with an incarnative plaster,—but this art died with its Author."* The absence of

* Vir quidam, meis diebus, in tractu Juliacenci, Cancrum unum quemlibet sanabat, *insperso pulvere indolente:* atque tum demum emplastro incarnante solidabat, cujus ars secum sepulta est. *Van Helmont Cap. de ideis morbosis, p.* 547.

pain during the application of this remedy sufficiently demonstrates that it was not composed of Arsenic, but that mineral probably entered into the composition of a remedy mentioned by Lusitanus, as invented by Fuchsius an Italian, who gained such celebrity in curing this disease that he was generally called the Cancer Physician *

In a dissertation upon Cancer, by Gerard Tabor, inserted in Haller's Disput. Chirurg. there is an account of a man of the name of Consillarius Kortholt, of Regiomontum in Prussia, who possessed a secret remedy for Cancer. This man had within that Author's knowledge, cured a Cancer of the lower Lip, and three cases of the same disease situated in the Breast occult and open; one

*——tale fuit procul dubio medicamentum, quod Fuchsius Italus Cancros curare asserebat, ideoque medicus cancrorum vocabatur; ejus curandi ratio hæc erat; inspecto loco secretum, uti dicebat, sibi pulverem applicabat, si intra triduum tumor non exacerbatur, sed in melius tendebat, sanari posse prædicebat, idq; ex sibi secretis signis, quæ ego nulla alia esse existimo, quàm quod à medicamento corrosivo non excandescere, indicium est radices non admodum altè esse infixas, *nec humorum* valdè *adustum* uti diximus, tunc igitur pulvere persistebat, ad tricesimam usque diem quo termino ut referebat radices extinctæ, ac attritæ, ex se cadebant, ac si quid adhuc adhæreret, scalpello sensim præscindebat; deinde pulvere incarnante, &c.

*Rod. Castro Lusitanus de morbis Mulierum, Lib.* i. p. 144.

of these was of remarkable extent*, but we are not informed concerning the mode of applying the remedy, nor whether pain followed its application.

In the same work there is another dissertation upon Cancer, written by Wm. Triller, who also gives an account of a secret remedy, which seems to have had a striking resemblance to the Oxyphosphate of Iron, both with respect to its appearance, the excitement it occasioned, and the progress of the cure during its use. In this dissertation we are told†, that the " celebrated Pe-

* Primo cancrum labii inferioris, deinde Cancrum Mammæ primo occultum, postea appertum satis insignis magnitudinis, et tandem cancrum Mammæ eximiæ capacitatis, cum remediis Consil: Kortholti tractasse et feliciter curasse.

*Halleri Disput. Chirurg. Tom. 2, p. 463.*

† Tale tamen remedium a Boerhaavio jure desideratum, nulla ære mercabile, nullo inquam, auro æstimabile, habuisse unice rarissima quidem felicitate, videtur celeberrimus iste sævi cancri domitor, uti vocabatur, Petrus Alliot, Barroducæus, rerum medicarum & chemicarum scientissimus, qui generosioris cujusdam Feminæ mamillæ sinistræ a crudelissima cancri teterrimi pertinacissimique tabe per integrum jamjam quadriennium, immane quantum pereræ *inspersit quotidie albicantem quemdam pulvisculum sibi soli notum, unde post horulæ spatium, levis coorta febricula, quæ tamen mox cessavit, & quietem ægræ indulsit. Ita continua pulveris hujus inspersione, sesquimense, effecit, ut vulneris labra ex livido, in rubicundulum terminarentur colorem, & ichor serosus paulatim in coctum laudabiliter pus verteretur, quo facto, vulgaribus*

trus Alliot, a man of great medical and chemical knowledge, recovered a woman of rank from Carcinoma, which had eaten away in a dreadful manner her left Breast. He daily sprinkled the Ulcer with a *bright white powder*, whose component parts he never disclosed ; in about an hour from the application, a degree of excitement ensued *(levis coorta febricula)* which however soon ceased, and left the Patient at ease ; by a perseverance in the use of this powder for six weeks, the lips of the wound *changed from a livid* to a *reddish colour* and the *watery ichor into healthy concocted matter*, after which the wound quickly healed.

*sarcoticis, ministrante chirurgo, plagam consolidavit* Quæ sunt ipsa verba testis non auriti, aut rerum harum imperiti, sed occulati potius, præsentis, & *qui visa sibi loquitur*, ut ipse scribit, simulque, rerum medicarum ac chemicarum juxta peritissimi, hincque tanto magis fidem plenem merituri, nimirum doctissimi illius & celeberrimi per orbem viri Olai Borrichii, qui hæc ipsa suo tempore, Parisiis, publice gesta, miraculo tamen propiora, quam rei naturali, aut ordinariæ, candide, docte, copiose, atque simul ornate, memoriæ prodidit, in Actis Med. Hafniens. per Thom. Bartholinum, virum summum, publicatis, Vol. I. Obs. LXXII. p. 160, ex quibus eandem mirabilem Historiam in medicinam suam septentrionalem transtulit Theophil. Bonetus, Tom. II. Lib. IV. Sect. XI. Obs. 6, page 158, sqq. Vehementer autem cum eodem laudato Borrichio, dolendum, illum ipsum admirandæ virtutis pulverem, sæculo tantopere profuturum, cum suo Auctore, lucri perituri cupidiore, quam famæ æternum mansuræ, jamdudum in pulverem cineremque abiisse.

Such (the Author continues) are the words of a person who relates the transaction, not from hearsay, but the evidence of his own eyes, and it deserves the more credit as he was deeply skilled in medicine and chemistry, and was no less than the celebrated Olaus Borrichius. He published them in Actis Med. Hafniens. Vol. I. Obs. lxxii, p. 160, edited by Thom. Bartholine. The cure made much noise at Paris, and was considered rather as a miracle than an ordinary occurrence. Theophilus Bonetus afterwards transferred the account into his system of Medicine, but he strongly regrets with Borrichius, that the inventor of a powder, so capable of being of advantage to mankind, should be so much more covetous of perishable profit, than of immortal fame, that he suffered the secret to die and be buried with him."

After the lapse of near a century, our admiration is again excited by the inventor of an application, that " by gradually increased absorption removes this dreadful disorder, and reduces the part to its proper form ;" and again our indignation is provoked, that a discovery so honourable to its Author, should be deprived of all its value, by being witheld from the knowledge and service of mankind : for no other purpose, that can rationally be supposed, than the inhuman wish, that *his* Patients only shall reap the advantage, or

the absurd hope that *himself* shall be the only Physician of a disease, that is found in every climate and country.

That this approbation and censure are not undeserved by Doctor Nisbet, every person will be satisfied, that opens his Papers on the subject of Cancer, in the Medical and Physical Journal*, which are generally in the name of other persons; as if he was anxious to abstain from relating his own cases, lest every reader should ask, why the remedy remained undisclosed, when every page and every paragraph gave the opportunity, or betrayed the necessity of its insertion—and even when he ventures to take up the Pen, it is amusing to trace the ingenuity with which he winds away from the discovery he seems every moment to approach, until repeated disappointments inform us of his intention to leave us for ever in the dark.

In the last publication which he honours with his name, he enters with great elegance, into a history of the circulation of the blood, the lymphatic system, and the uses of respiration—explains the composition of Fat, and from thence, when we suppose, the subject he meant to treat of, was forgotten, he at length makes a transition to Cancer, dissects the parts of the disease,

* See Medical and Physical Journal, *Vol.* iv. *p.* 296—545.
——————————————*Vol.* v *p.* 76—188.

and promising a nearer view of its characteristic symptoms, breaks of his letter in the middle, and raises our expectations by a parenthesis at the foot of the page, that his labours are (*to be continued**.)

But if they ever were continued, from that time to the present, I can only regret my want of good fortune, for I cannot tax myself with deficiency of diligence, in not being able to discover the residue. But among the communications of his Amanuenses†, I find the treatment of one case, which strongly excites my attention—a Cancer of the Uterus, accompanied with venereal symptoms—and *with a view to this last circumstance*, a pill composed of *four parts of Steel*, and *one of Mercury* was prescribed—along with this, Cicuta and Carbonic acid were thrown in, but whether intended against the Cancer, or the Lues, we are not allowed to discover,—however to palliate the pains in the back and loins, a strong camphorated ointment was rubbed in, and we have the satisfaction of ascertaining, that this at least was to combat with the Cancer; but whether it did the business alone or in conjunction with the other ingredients, we find that after

* Medical and Physical Journal, *Vol.* viii. *p.* 294—300.

†———————————*p.* 431.

eight days, the pain decreased, and the Patient recovered*.

If the Doctor had not expressly said, that the Steel was intended for the Lues, I should have supposed it was his chief engine of attack against the Cancer; and if it was really used with that view, Humanity and Candour require the acknowledgement, and I call upon him publickly to declare whether any preparation of Iron is, or is not his *secret remedy*.

After the numerous cases I have related, it is scarcely necessary to say any thing more on the mode of exhibiting the different preparations of Iron; but it may be satisfactory to some to recapitulate in a few words such information on the subject, as is scattered in different parts of the work. The preparations I have given internally, are the Tartrate of Iron and Potass, and the Carbonate, Phosphate, Oxy-Phosphate, and Sub-Oxy-Phosphate of Iron. Some Stomachs can only bear the preparations in small quantities, they affect most constitutions with Constipation of the Bowels, and many with Head-ach, and Dyspnœa. A watchful regard of these circumstances is therefore necessary, in regulating the dose of the

* It is rather surprising that in a following Case, we are told, Doctor Nisbet proposed *the same plan of treatment*, as in the preceding, although there is no hint that there was venereal affection to be combated.

Medicine. I have, however, in very few instances, given less than 30 grains, in divided doses during the day, or have exceeded 60. The latter quantity I have persevered in giving to many Patients, for a great length of time, without any ill effects, but when I attempted to increase it farther, I generally found that the stomach became disordered. Almost in every instance, an increase of appetite, alleviation of pain, and amendment in the discharge followed very soon after their internal exhibition ; but in many cases no farther benefit was derived from them. The Sub-Oxy-Phosphate of Iron is the Medicine I am inclined to prefer for internal use, which like all other Salts of Iron answers best when given in small doses, and frequently repeated. Probably the best manner to exhibit this preparation is to blend it with White of Egg, and to add a small portion of pure fixed Alkali, which will render the Iron more soluble in the Stomach, and then form it into Pills, with powdered Liquorice. This mode was suggested to me by an ingenious Gentleman fond of Chemistry, residing in the neighbourhood of Shrewsbury, who some time since had occasion to consult me concerning the state of health of a near Relative.

Great inconvenience constantly arises from constipation of the Bowels during the exhibition of Ferruginous Medicines, which in some consti-

tutions increases to so great a degree as to preclude a perseverance in their use. This was peculiarly the case of Mrs. W. who resided in London, and was afflicted with an extensive Ulcerated Cancer of the Breast. She was under the care of Mr. Lynn and Dr. Reynolds, but the following paragraph, in a letter I received in September, 1808, will explain the difficulties they encountered in the exhibition of one of those preparations, the Sub-Oxy-Phosphate of Iron,—"Doctor Reynolds, after repeated trials, in various ways, finds it impossible to administer it internally, the last effort he made was by giving *one grain* as a dose, combined with some opening Medicine, but it nevertheless produced such insurmountable constipation, that it could not be used above two days, and made her extremely ill the week after."

This troublesome obstacle to the use of Ferruginous Medicines, induced me very early to combine with them a variety of Cathartics, in the view of obviating their constipating effect.—After trying a variety of Medicines, I found Aloes to answer best, and discovered that even this Cathartic in combination with Iron, has a far greater effect than if given in three or four times the quantity alone. The first time I tried it was in the case of Mary M'Clean, (Case XXXIII. p. 126.) who was affected with the most obstinate constipation, for which Scammony, Calomel,

and other strong Cathartic Medicines were ordered in vain ; but on prescribing one grain of Aloes to each of her Pills of Carbonate of Iron, two of them induced a severe Diarrhæa. I took a note of this circumstance at the time, but did not then attribute the effect upon her Bowels to so small a quantity of Aloes, but to some accidental circumstance which I could not account for. It was therefore my practice, to order other opening Medicines, without any predilection for a length of time afterwards, and it was not 'till very lately, that Aloes again occurred to me. I was soon however decided in its favour, when I found that half a grain, combined with a Pill containing four grains of Carbonate of Iron, taken three times a day, is more than sufficient to preserve the Bowels free, notwithstanding the constipating effect of the Chalybeate ; and I am now constantly in the habit of ordering the Medicine, combined in this manner, without any of those difficulties that formerly perplexed me.

Many have imagined that whatever benefit the Preparations of Iron are capable of effecting in Cancer, depends alone upon their local application, but a sufficient proof of their efficacy, when taken internally, was afforded in several cases of Cancer of the Womb, in which an alleviation of pain, and amendment in the discharge took place, altho' no local application had been used.

In some Persons, the internal use of Iron increased the vascular action to a great degree, as became apparent by the evident beating of the Carotids, and flushing of the countenance, accompanied by a strong, full pulse at the Wrist; but I did not observe these symptoms as frequently as might be expected from the large and repeated doses in which the Medicine was exhibited. But these are not the only inconveniencies attending Chalybeate preparations: I have reason to think that if the Constitution is overloaded with this Medicine, that a peculiar fever is the consequence. It begins with Head-Ach and difficult respiration, a quick pulse, sometimes full, but in general hard and wiry, and accompanied with excessive languor and lassitude. I have seen more than one instance of this kind, but so slight that intermitting the Chalybeate was a sufficient remedy; but in one instance, (Case XXXVIII.) the symptoms were so violent as to require active means of relief, and the remedy I adopted was Camphor, with the view of disoxigenating the over proportion of Iron in the system. I ordered 4 grains every fifth hour, and the symptoms of Fever quickly disappeared. I do not adduce this solitary instance as sufficient to establish the practice I pursued. A second case might have proved my reasoning and prescription unfounded and erroneous; but it may be satisfactory to a Practitioner meeting with a similar case, to be informed of the means which succeeded even *once*,

and in the most cautious hands there is a chance of its occurring, if by any accident the preparations of Iron should not be omitted on the first indication of head-ach. The knowledge that peculiar fevers may arise from the introduction of metallic substances into the system, is a modern discovery and may lead to considerable improvements in medicine. That produced from the use of Mercury, tho' attended with a peculiar eruption was not known till very lately, when Doctor Alley's treatise on the " Mercurial Disease" made it public, altho' it is of the most dangerous nature, and often proves fatal by a perseverance in the medicine where its symptoms are mistaken for those of Syphilis.

The preparations of Iron I have used externally in ulcerated Cancers are the Carbonate, Phosphate, Oxy-phosphate, and Arseniate of Iron. Perhaps the best mode of applying these preparations is to blend them with water to the consistence of a thin paste, with which the surface of the Ulcer should be covered, and the application in general twice renewed in the twenty-four hours. When I first tried the preparations of Iron I sometimes blended them with unctuous substances into the form of an ointment, but I soon found that this mode was less efficacious, and that greasy applications universally injured cancerous Ulcers in every situation.

Though the application of the Carbonate, Phosphate, and Oxy-phosphate of Iron produces no pain, yet the Sub-Oxy-phosphate immediately after its application always excites a very severe smarting sensation which usually subsides in less than half an hour, or an hour. Probably this circumstance is owing to a portion of the caustic Alkali remaining in the preparation and would not take place if that substance were washed away; but as it renders the compound soluble in animal fluids, perhaps it should not be removed.

Although I do not recollect a single instance of pain or inflammation excited by the application of the Carbonate of Iron to a cancerous Ulcer, yet the very reverse takes place with respect to simple Ulcers or venereal Chancres, an experiment which I have repeatedly tried. This is a circumstance which might assist our diagnosis in doubtful cases.

The Oxy-phosphate of Iron is met with in the shops under very different appearances. It is either of a bright white colour or a dull white approaching to yellow; the former is the preparation I have found most beneficial: the colour of the latter is owing to a portion of the Sulphate of Soda remaining from the filter, which ought to have been washed away. Mr. Accum of London mentioned to me, that when travelling through

England and this country, he frequently saw the Phosphate of Iron, which is of a blue colour, sold in the shops for the Oxy-phosphate.

I have given only two instances where the Arseniate of Iron was applied, but I am at present using it in several cases of cancerous Ulcer. My inducement to try this preparation arose from the character which the Arsenious Oxide has so long maintained for the cure of Cancer, and I was determined to try it in combination with Iron, that thus I might have the powers of two active remedies conjoined in one substance, and I have employed it with advantage in several obstinate cases, that resisted the other ferruginous preparations. It does not excite any uneasiness till about an hour after it has been applied; differing in this respect from the other preparations of Iron which if they excite any pain, it immediately follows and soon subsides after their application, while the uneasiness produced by the Arseniate continues for several hours; but it is so slight that it does not interrupt the usual avocations of the Patient. Some degree of swelling follows its use, but particularly when applied to Ulcers on the Face, and this I have known to occur without the slightest previous pain. After the first days application the surface of the Ulcer acquires a bluish cast, which on the succeeding days becomes darker, till at length a slough is evidently formed, and a line of separation is soon after

observed to have taken place between it and the surrounding living parts. An emollient poultice for a few days assists the separation of the slough, which may be accelerated with great advantage, by cutting away such parts with scissars as can be removed without putting the Patient to pain. When the slough has been removed the Arseniate should be again renewed and persevered in till the entire of the cancerous substance has separated.

A Patient of Mr. Piele, with whom I was also in attendance, afforded him a most satisfactory proof of the value of this preparation. The Patient was Mr. R———, about 50 years of age, who for several years had an indolent Ulcer on the side of his nose, which displayed the usual appearances of Cancer in the Face. It gave him no uneasiness till latterly when it began to spread and involved a great part of that organ. The Arseniate of Iron was applied in the form of the paste I have described, over the entire surface of the Ulcer for two successive days. The application did not exite the slightest pain but produced a deep slough, which was removed by scissars; a small hardness remained on the upper part, which became a slough in three or four days by confining the application of the Arseniate to that spot, while the remainder of the sore was dressed with Oxy-phosphate. In three weeks the sore was compleatly healed, and he

returned to the country in perfect health, the circumstances of his case having afforded the strongest evidence of the efficacy and innocence of this preparation.

The Arseniate ought not to be applied in the same quantity as the other preparations of Iron, as we should always be on our guard against the baneful effects arising from the absorption of the Arsenious Acid; therefore if the Patient is is affected with a sense of lassitude, with trembling of the hands, or weakness of the knees, symptoms portending Paralysis—or even complains of nausea and loss of appetite, we should immediately desist from its use and content ourselves in a perseverance with the other preparations of Iron from which no prejudice can ensue. But these cautions, tho' necessary ought not to prevent the use of a sufficient quantity of the powder, which to the extent of from half a dram to a dram I frequently apply at a dressing in cases of exensive Ulceration and without any ill affect whatever to the constitution. In more than one instance I found the greatest benefit from employing Arseniate of Iron and Oxy-phosphate alternately—for either used for a continuance seemed to lose its virtue and to be incapable of producing a slough, while the other acted with proper effect for a while—in its turn lost its influence, and gave place to the first which seemed to be again restored to all its powers.——This

circumstance I think demontrates that the Oxides of Iron and Arsenic act differently in this disease. The Iron probably affects only the Carcinoma, while the Arsenic by its deleterious effects on the organization of red blooded animals, destroys the parts which surround the Cancer and thus deprives it of its support; an opinion that is greatly strengthened by its mode of operation in two or three cases lately under my care, whose combined evidence I prefer to the facts in case xv. which led me to think otherwise. If Arseniate of Iron produces this double effect, it must be esteemed a preparation of the highest utility; yet it must frequently give place to an Oxide of Iron whose whole force is employed on the cancerous substance, but it is totally unnecessary that Oxide of Arsenic should be ever used alone, as its effects would be more mischievous than beneficial if not qualified by the presence of the Chalybeate.

The facts on which I ground this explanation had not occurred to me when I considered the effects of Arseniate of Iron in this disease as lending no support to the theory of the vitality of Carcinoma, but add greatly to its strength if it is ascertained to act not so much on the Parasite, as on the parts that im-bed it—and that this is the case I am still further inclined to believe from an experiment I have frequently tried with

the common earth-worm, which when sprinkled with Sub-Oxy-phosphate of Iron died in two or three minutes while the Oxide of Arsenic did not produce the same effect in less than two hours. When in consequence of these applications, a slough is formed on the surface of a Cancer of great bulk and extent, I remove the Eschar by the knife in order that the remedy may be brought into immediate contact with the living mass— for it is so much time and trouble fruitlessly expended to continue its application to the substance it has already destroyed, and which prevents its penetrating where its action is required. But if the bulk is small as in Cancers of the face this operation is unnecessary, as the separating substance in general comes away spontaniously and by degrees in the thick tenacious discharge of the Ulcer.

The external applications I use in occult Cancers are a solution of Sulphate of Iron, commonly in the proporton of an ounce of the salt to a pint of water; and the Acetite of Iron diluted with eight or ten times its weight of water. I much prefer the Acetite of Iron to the other preparations, as the Acetic Acid possesses the property of softening the Cuticle, and thereby giving an easier admission to the Iron by the Absorbents of the skin. These embrocations are applied by means of folded linen, external to which a piece of oiled silk should be placed to

prevent the fluid from injuring the Patients cloathes.

Occult Cancers are less likely to be benefitted by Ferruginous medicines than such as are open, because in the former the remedy cannot be applied immediately to the diseased part; yet by combining its outward and internal exhibition in cases VIII. X. XVIII. and XXI. ample proofs were afforded of the great benefits resulting from their use. Doctor Monro remarks that "tho' the resolution of Cancer is a rare occurrence, yet having seen two such tumours, or at least what he judged to be such *cured*, he would not exclude the supposition altogether."* And in addition to the facts already stated, I shall adduce the testimony of others in proof that Ferruginous preparations are capable of resolving cancerous tumours.

Mr. Justamond, whose practice has been already noticed, treated several cases of occult Cancer of the Breast with the lotion already mentioned, in which Iron *happened* to form a principal ingredient, and to which I am inclined to attribute whatever virtues it was found to possess. Among those cases, the most remarkable was that of Madam Perrin, a woman advanced in years; she had two scirrhous tumours in her left breast, which were both very large,

* Monro's Works, p. 490.

hard, and painful; and one of them, which was as large as the fist, formed an angular projection, which appeared as if likely to adhere to the skin. This woman took the Flores Martiales (Muriate of Iron and Ammonia) very freely, and applied to the tumours by means of linen compresses the liquid before mentioned. In a few months after she commenced this treatment, the pains were greatly relieved, and after she had persevered a twelvemonth, "the tumours were so considerably decreased in every respect, that they were reduced to much less than a fourth part of their former size; the smallest of the tumours became scarce perceptible, and the largest was almost flat, and was divided by several chops or fissures under the skin, which made it feel as if it was cracking to pieces. The angular projection was removed from the skin, to which there now appeared no danger of an adhesion being formed; and the tumour was so remarkably softened, that it felt rather like a piece of wet and rumpled rag in the Breast, than like an indurated gland."*

It would be surprising that this remarkable instance of the efficacy of Ferruginous medicine in dispelling a cancerous tumour did not excite a greater degree of attention among Practitioners, if their mind had not been engaged by

* Justamond's Surgical Tracts, p. 570.

the other ingredients of this lotion, to which Mr. Justamond exclusively attributed his success. I do not find that any other Practitioner is recorded to have given them a trial, except Mr. James Lucas, who, in the 7th vol. of the Medical and Physical Journal, relates a case in a letter to Mr. Pearson, the facts of which are stated so concisely, that I shall take the liberty of transcribing it.

"A. R. between thirty and forty years of age, of a corpulent habit. had an enlargement in her Breast, exceeding the size of a turkey's egg. The tumour, which had been gradually increasing for a year, had lately made a more rapid progress, and become so indurated and painful as to oblige her to apply for relief; nor could she assign any cause for the complaint.

The application of leeches was directed to be repeated according to the urgency of the pain. A piece of linen, in several folds, moistened with an anodyne compound of litharge lotion, was frequently applied to the swelling, and increased doses of conium maculatum were prescribed. When these remedies had been strictly persisted in for several weeks, it was observed, that the liberal evacuations had constantly afforded relief, but that the patient was considerably reduced. The bulk of the tumour was evidently diminished, yet the nipple continued to be much de-

pressed, and the skin around it had become somewhat inflamed, nor could the induration be said to be abated. She now complained more of soreness than the lancinating pains that had before created such uneasiness.

The topical bleedings were ordered to be omitted, unless the pains should be urgent. Applications of cold water were used instead of the former lotion.—Doses of the ferrum ammoniacale were given twice or three times a day, and the conium maculatum at bed time.—Such variations in the diet were directed as suited the changes in the medical treatment. In a few weeks the whole Breast had a less malignant appearance, the diminution of the tumour was evidently progressive, and the pain entirely ceased. A soap cerate plaister was in a little time ordered for a small remaining soft tumour, rather to be discovered by the touch than the eye."

Undoubtedly in this case, Cicuta and other remedies were exhibited with the preparation of Iron, but their failure in all cases, and they were very generally tried, fully warrants us to attribute the benefit derived to the Ferruginous medicine.

Altho' there is no other case upon record, I have lately been informed of one more, thro' the attentions of the Gentleman near Shrews-

bury, to whose scientific communications I have already acknowledged myself indebted. "The heads of the case I have hinted above" his letter continues "are these in a few words. Mrs. S. a Lady far advanced in life, had been for a length of time afflicted with open Cancer of the worst description. She was at last given up by her medical attendant, who told her nothing farther could be done than to keep it clean, and whose private expectation was that she could not survive a fortnight. The very next day, however, he came again; had just heard an extraordinary report of Justamond's success with Iron, and wished her to try the Ferrum Ammoniacale (the old Flores Martiales.) She took internally half a dram a day, and used as a lotion a decoction of hemlock. In a very few days the discharge became better; good laudable pus; and every distressing symptom abated. By perseverance the sore grew less and less, and it occurred to herself to apply the Flores Martiales externally also. She did so with still increased benefit, the sore at last contracting to the size of a shilling, but never quite healed. She also found that if she ever neglected her medicine the sore enlarged, and every thing became worse, but was again subdued when she renewed her former care. This lasted eighteen months, or a couple of years; when, in 1797, she died of a paralytic affection, perfectly unconnected with her former malady.—This ac-

count may be depended upon; coming to me from an intimate Friend, formerly a Medical Practitioner of much respect, who saw the case himself, and whose present wife was Mrs. S——'s daughter.

A servant also of the family who had a Cancerated Lip, was greatly relieved by the same method. I have also *this summer* myself seen a very desperate case of Noli me tangere in a Gentleman cured on the same principle. He was a Patient of Mr. Cline."

Among the preparations of Iron I have recommended, it may be thought extraordinary that the Muriate of Iron and Ammonia, which Mr. Justamond found so serviceable is not mentioned; but my reason for omitting it is, that it is extremely nauseous, and therefore capable of being only exhibited in very small doses, for so I found it in several instances in which I gave it a trial; and as there are no grounds for supposing that the addition of the Ammonia encreases the virtues of the remedy, and its presence prevents the Iron from being taken in the necessary doses, I think the preference is due on every account to the other preparations I have so often mentioned of that metal.

As it is my object in this disease to give a trial to every remedy which has been recommended

on creditable testimony, either singly, or in conjunction with others, I was induced, by Mr. Justamond's recommendation, to exhibit the Extract of Hemlock in combination with Iron, and in some cases the union was attended with evident benefit. The most remarkable was the case of Mary Judge (Case XIII.) This woman, about eighteen months after the Ulcer under her left Breast had healed, complained of pain and weight about her Loins, accompanied with severe lancinating pains thro' the Pelvis. There was a large lump which could be felt within the cavity of the Abdomen in the left Iliac Region; it was painful upon pressure, and had been first observed about four months previous to her second application to me; but there had been no return of the Ulceration on her side. I at first ordered her the Sub-oxy-phosphate of Iron, which she took in large doses for six weeks, but without any amendment, when I directed it to be combined with the Extract of Cicuta, in the proportion of one grain of the Extract to ten of the Iron, in pills three times a day. The former was gradually increased to six grains in the day, the dose of the Iron remaining the same, and there was very soon a cessation of pain, and a diminution in the size of the tumour. She persevered in this treatment about five months; the tumour disappeared, the pains ceased, and her general health was completely restored. From the situation of the tumour, the disease appeared to me to engage the left

Ovarium without any affection of the Uterus, there being no discharge from the Vagina, or induration of the Os Tincæ.

In addition to the means already detailed for the treatment of Cancer, Chalybeate waters must afford undoubted benefit, not only after the disease is formed, but as a preventative in such persons as, from the paleness of their countenance and general languor of their system, seem predisposed to the disorder ; but with this view it is particularly indicated in this description of persons at that period of life, when the approaches of this malady are most to be dreaded.

Before I conclude this subject, I would strongly impress on every Practitioner the necessity of unremitting personal attention in Cancerous cases, nor entirely confide the application of the remedy to any person about the Patient, or even the Patient himself ; for by an unaccountable fatality we often find the individual most interested most culpably negligent of the means of recovery. And in a disease whose advances are frequently so rapid, and always so certain, it is dangerous to give it any advantage by omissions or delays—and many must occur to the Surgeon who has not his patient daily under his eye. Circumstances may require the change of one preparation of Iron for another—a slough may be produced that ought to be removed—the me-

dicine perhaps should be intermitted for a while —opening medicines may be imperiously requisite—or Camphor, or some more apposite remedy, may on the instant be necessary to combat the extraordinary symptoms I have already detailed. The chance of recovery is indeed but small if any opportunity is neglected of contending with the disorder, or subduing those difficulties that may prove as fatal as the original malady; nor tho' it may seem of less importance, is it at all unadviseable to inspect the medicine frequently, as unsuspected mistakes have to my knowledge produced the most serious consequences.

I have thus plainly and openly unfolded all I know of the treatment of this implacable distemper, and descended to the minutest circumstance that might add any thing I could esteem of service to the information of others. Great indeed will be my disappointment if I have not rendered familiar to the dullest understanding, the means of combating every vulnerable form of this disease, and put it in the power of every Practitioner to adopt at once, with all the advantages I slowly and gradually attained, a practice that I have found in so extraordinary a degree successful. My ambition was not of a nature to be satisfied with the reputation or the profits of a secret remedy; it is my pride to share my information so fortuitously acquired with my

Profession; and to go hand in hand with them in communicating to the afflicted such relief as Providence now enables us to bestow, after inflicting the Evil without extending a Remedy * for so many ages.

* I think it necessary to notice here as I did on a former occasion, an attempt in a late publication, to deprive me of the merits of my discovery, and perhaps in time arrogate it to its Editors, or at least bestow it on Mr. Justamond, who is no longer an object of envy. In the Edinburgh Medical and Physical Dictionary, under the head of Cancer, there is the following remark: "With regard to the use of Iron, it "may be truly said, that it has a very considerable effect "in supporting the system and lessening debility, and it will "even produce very flattering appearances in some cancer-"ous sores, *more especially those of the face.* It is neces-"sary perhaps at the same time, to employ the spirituous "preparation of the same metal as a tonic, and in many "cases, it has been attended with the evident effect of re-"tarding the extension of the Cancerous Ulcer."

It is true, the Editors of the above work, give a long quotation from Mr. Justamond, but they would never have ransacked that author for the information he contains, if it had not been for the clue afforded them in my Essay, altho' they think the obligation too trifling to acknowledge. It could have been only from the successful cases related in my work, they learned that this remedy produces "flattering "appearances in Cancerous Ulcers in the face," for Mr. Justamond in every such case which he details, employed *Arsenic alone;* and it is extraordinary that although his first motive for employing the remedy recommended in the German Ephimerides, "was the muriated Ammonia used in it, and that he was afterwards convinced that the addition of the Steel had a very considerable share in its virtues," yet with

this conviction Mr. Justamond in his most favourable case, ascribes the share which Iron had in the improvement of his Patient, to its invigorating effects on the constitution, and actually applied Arsenic to the sore, as the proper remedy for the Cancer, which he elsewhere terms "the true antidote against this disease," and uses it in every Cancerous Ulcer, wheresoever situated. If these Editors be honest in their statement, I have nothing to complain of. They were authorized to omit my name, if they were satisfied in conscience, I was but a plagiary in this discovery, but I should have been indebted to their candour if they had boldly denied my claim, and given me an opportunity of asserting it. In place of which they silently seized the hints I gave them, as to the previous use of something like my remedy; and although no fraud might be intended, yet by having dated their title page in 1805, in a few years it would scarcely be known that the *periodical number*, which contains the disquisition on Cancer, did not appear till after my publication in 1806; and on a comparison of dates, little perhaps of the merit of my discovery would have rested with me.

## CHAPTER VI.

### CONJECTURES CONCERNING THE USES OF IRON IN THE SYSTEM. *

ON a consideration of the facts resulting from the use of Iron in cases of Cancer, particularly the removal of this disease in various instances by the external application of a substance which does not possess any escharotic quality, and the no less beneficial effects arising from its internal exhibition, we are led to consider the uses which nature has designed, in furnishing the bodies of warm blooded animals so abundantly with this

* This and the two following chapters are referred to in the beginning of the work, by the name of "Miscellaneous Chapter," it being originally intended to be published as one chapter, but it was afterwards found more convenient to make the present division.

identical substance. It would be preposterous to suppose that it has been merely supplied to bestow the red colour on the blood, a fact which is of importance to know, but ought surely to have been followed up by further research, while it seems unaccountably to be neglected altogether.

It has been lately discovered that Iron is not the colouring matter in animals only, but that even vegetables assume their green appearance from the same cause,* consequently it must occur to every reflecting mind that this metal with which *almost* all organized Beings seem to be furnished, and which probably on that account as much as

* This discovery has been made, as Mr. Accum informed me, by Mr. Davy, and that an account of it will shortly be given to the Public. Iron exists in so great abundance in some plants that Mr. Fourcroy, computes the ashes of the oak to contain one-twelfth of their weight of Iron (Fourcroy, Vol. VIII. p. 135.) Even Doctor Darwin, among other of his eccentricities was of opinion that Iron may have been formed by the decomposition of vegetable matters. In support of this he urged that the waters oozing from all morasses are Chalybeate, and deposit their Ochre on being exposed to the air, and that Fern-leaves, and other parts of vegetables, are frequently found in the centre of the Nodules of some Iron Ores (note to Botanic Garden, part I. p. 76.).—Tho' it is but slightly connected with this subject it may be useful to mention that two of the preparations recommended in this work frequently occur in nature; Phosphate of Iron, called Native Prussian Blue, is often found in bogs, and native Arseniate of Iron in the mines of Cornwall.

its other advantages, is providentially scattered over every climate and soil, has not been provided for trivial purposes, but must answer some great and efficient ends in the œconomy of the animal and vegetable creation.

What this may be with respect to animals, it is with diffidence I venture to conjecture, but as ideas occur to me respecting its use, which explain, I think, more satisfactorily some of the animal functions than the Hypotheses which have been hitherto maintained, I am emboldened to offer them, as the hints they suggest may be of service by inducing others more capable to to pursue the enquiry.

The discovery of Iron in the blood was made by Badia, but Menghini an Italian Chemyst was the first who attempted to investigate its properties and ascertain its proportion.—Its presence may be detected by mixing a little powdered nut-galls with some blood, which in less than forty-eight hours will in consequence assume a deep black colour. Or by exposing a portion of blood to a heat inferior to that of boiling water, the coagulum when dried will give undoubted proofs to the magnet of the presence of Iron.—When blood is heated in a crucible, after the volatile matters pass off, there remains a mixture of Oxide of Iron, of a blackish colour, granulated and crystallized; Carbon combined with

a little Iron and almost in the state of a Carburet of this metal; and finally Phosphate of Lime and Muriate of Soda.—When blood is distilled in a close apparatus there remains in the retort, a spongy coal of a brilliant and metallic appearance, adhering very strongly to the vessel, very difficult to be incinerated, in which are found by analysis, besides the Carbon united with a little Iron, Phosphate, Muriate and Carbonate of Soda, Phosphate of Iron and Phosphate of Lime.* But Chemysts as yet have been more occupied in determining the presence of Iron, than in discovering with precision its proportion and the state in which it exists in the blood. Rouelle, Menghini and Galeati suppose that the Iron reduced to the state of an Oxide, by the Oxygen imbibed by the lungs is united with Soda, which they think gives it the property of being soluble in aqueous fluids, and that at the same time from this union results the sanguine colour.†

Fourcroy supposes, as appears from the follow- passage, that Iron exists in the blood in the state of a Sub-Oxy-Phosphate, "we have found," he says, "in our experiments relative to the colouration of the blood, that the Super-oxyginated Phosphate of Iron has an excess of its base; that this Phosphate dissolves very well, and by the

* Fourcroy, vol. 9. p. 177—8.

† Johnson's Animal Chem. v. 1. p. 74.

slightest agitation on trituration in raw white of egg, and in the serum of blood; it is not even necessary to employ the aid of heat in order to effect this solution, since it takes place in the cold by mere motion, presenting immediately a strong red colour, which resembles that of blood. A little pure fixed Alkali accelerates this solution, and renders its colour more perfect and lively: Thus the Phosphate of Iron, the quantity of which tho' very small, is sufficient to colour the blood, exists in it in the state of Super-oxidation and of excess of metal; it is dissolved in its albumen, and brightened by the Soda contained in it—perhaps the Phosphate of Soda existing in the Serum has no other origin than the partial decomposition of the Phosphate of Iron by the Soda." * It seems then from the experiments which were performed by the celebrated Chemysts, Fourcroy and Vauquelin, that Iron in the blood is combined with Phosphoric Acid, but that there is an excess of the metallic base, from the presence of Soda, which deprives the Iron of a portion of its Acid, reducing it to the state of a Sub-phosphate, and rendering it soluble in the serum of the blood. Fourcroy makes no calculation as to the probable quantity or proportion of Iron which exists in the blood, but Menghini, who was one of its first discoverers, states, that there are two scruples of Iron in a

* Fourcroy, v. 9. p. 209.

pound of blood, and as it appears from the calculation of many Physiologists, that a middle aged healthy person requires thirty-five pounds of blood for existence, it follows that it must contain seventy scruples, or two ounces, seven drachms, one scruple, of Iron. This quantity is very considerable, and Menghini conceits that some future age, may see nails, swords, and other instruments, manufactured from Iron contained in the human blood.

Experiments are still greatly wanting to ascertain the various proportions of the component parts of the blood at different ages and temperaments, and to ascertain the changes effected in that fluid by disease. An investigation of this kind might not only throw great light on the obscurest parts of the animal œconomy, but explain why particular ages and temperaments are predisposed to particular disorders; a discovery that might enable us to prevent the attacks of many diseases of an incurable nature.

Thus we see that at present the only office assigned to the Iron, tho' found in so great quantity, is that of rendering the blood of a red colour; but it seems to me to fulfil some more important uses in the animal œconomy, and its subservience to the propagation of animal heat I regard as the chief.

I. It is only red-blooded animals that have warm blood; and I shall proceed to explain how that warmth may be generated. It is probable that the Iron in the blood, by its great affinity for Oxygen, affords a medium for the conveyance of that principle from the air in the lungs, to the different parts of the body; from which union, the Oxygen is detached in the course of the circulation by the other simple elementary bodies of which the blood is composed, Azote, Hydrogen, Carbon, Phosphorus, Sulphur, &c. &c. which have all a greater affinity for Oxygen than Iron, but do not combine with it in the first instance, because they return to the lungs *saturated with Oxygen*, in as great a degree as can take place in a living body; while the Iron of the blood at the same time is in a *low state of oxidation*, ready to rush into combination with an additional portion of Oxygen.

At the instant the Oxygen combines with the Iron in the lungs, the blood is changed from a dark purple to a bright red; but as the Oxygen afterwards gradually quits the metal to unite with the other simple elementary bodies, Heat is evolved in the course of the circulation in every part, and the blood at the same time by degrees re-assumes the purple colour; which is of its darkest hue at the time it returns to the lungs, a circumstance not only to be attributed to the dislodgement of the Oxygen from the Iron, to

which alone the bright red colour of the blood had been owing, but to the combination of Oxygen with Azote, Hydrogen, Carbon, Phosphorus, &c.

These remote constituent principles being at length oxidated, and no longer capable of nourishing the body, are expelled by the different emunctories, after having answered all the purposes for which they were taken in by the stomach. For instance, the Hydrogen united with Oxygen, forming water is expelled by the skin, kidneys and lungs. The Phosphorus united with Oxygen, so as to form Phosphoric Acid, passes out by the Kidneys and Biliary Ducts in combination with Lime, Magnesia, Soda and Ammonia; and the Carbon in the state of an Oxide arrives at the lungs and skin, where it combines with an additional portion of Oxygen from the atmosphere, and passes off in the form of Carbonic Acid Gas.

I am aware that Doctor Menzies, Doctor Crawford, Mr. Davy, and other celebrated Chemysts, found by their experiments upon animals, that the bulk of Oxygen Gas consumed by respiration, was equalled, or nearly so, by the production in the lungs of Carbonic Acid Gas. But we should not infer from this fact, that there is not any absorption of Oxygen by the blood; for tho' the quantities inspired and ex-

pired may nearly agree, yet this would take place equally well, admitting that a portion of the Oxygen had previously run thro' the circulation, and among other effects oxydated to a certain degree the Carbon before it arrived at the lungs; for it would be idle and unphilosophic to suppose, that a body so indispensable to animal life, and without which it is extinguished in a a moment, should answer the great ends we witness by being inhaled at one respiration, and expelled at another.

If Oxygen were only necessary by its combination with Carbon, to convey the latter from the Lungs, in order to leave the body capable of life, both the Lungs and the Oxygen seem rather superfluous, as nature might have contrived to carry off the Carbon on much easier terms by the intestines, or other organs provided for the removal of similar exhausted materials.

But by the Hypothesis now offered the equal production and dissemination of heat, thro' the entire body seems to be satisfactorily accounted for.—The Caloric disengaged in the lungs from the Oxygenous Gas, when its base unites with the Iron in the blood combines with the Carbon emitted from that fluid, the temperature of which being thus raised, it unites instantaniously with a portion of the inhaled Oxygen Gas, thus forming Carbonic Acid Gas, which is im-

mediately expelled from the lungs in expiration, while the other portion of Oxygen combines with the Iron, in order to circulate with the blood thro' the system.

Those whose opinions agree with mine, that Oxygen combines with the blood in the lungs, still differ greatly in the detail, as they explain its combination in such a manner, as that the temperature of the body would be greatest in the lungs, and diminish gradually as the distance from these organs increases, and thus refute themselves; or they suppose that the Oxygen is only *mechanically* dissolved in the blood, but combines *chemically* with it afterwards in the course of the circulation, during which union, Caloric is extricated and equally diffused in every part of the animal.

This last is the theory of De la Grange and Hassenfratz, and is, I believe, at present most generally received; but the following objections in my mind occur against it.

As Oxygen Gas exists in the atmosphere blended with Azotic Gas in such close intimacy, that they were never yet known to be separated by any means but those depending upon chemical affinities, and are of late allowed to be actually in chemical union, it is difficult to conceive, how the Oxygen admitted into the lungs with the other parts of the atmosphere, can pierce the

coats of the vessels to be mingled with the blood, unless its attraction is caused by chemical affinity. * And it is equally incongruous to suppose that the Oxygen by simply mixing with the blood could effect the remarkable change that takes place in its colour. When a fluid changes its colour, by the addition of another body, it assumes more or less the colour of the body added, except a chemical combination takes place between the particles of each; and then the colour produced by the union of the two, in general differs from that of either separately. It would therefore follow from the theory of M. La Grange, that Oxygen itself must be of a sanguine colour, a position which that Philosopher would scarcely be prepared to support.

But according to the theory I venture to offer, all these difficulties disappear, nor is there a necessity for supposing, with Ontyd and others, that the vital power of the lungs separates the Oxygen from the Azote of the atmosphere; for we find an explanation for the immediate

* I am aware that a small quantity of Azote is absorbed in respiration, but we cannot suppose the bases of both gasses are taken up united as they exist in the atmosphere; for in the atmosphere the quantity of the Azote, is three times greater than the Oxygen, while the quantity of the latter principle absorbed by the lungs, is infinitely greater than of Azote.

union of Oxygen with the Blood, by means of a metallic substance with which it is eager to combine, even at a temperature far below that of the human body. The bright red colour of the blood in consequence of this union is also more satisfactorily explained, as well as the superior capacity, of arterial over venous blood for Caloric, the chemical changes which take place in the arteries gradually rendering that Liquid more dense as it approaches their extremities, which, on being transmitted to the veins, acquires a still greater degree of density and tenacity, and consequently a smaller capacity for Caloric, in its progress to the lungs. The small quantity of Iron in the blood is no objection to the office I have assigned it, that of conveying the Oxygen in a loose state of combination, so as to yield it as required to the other inflammable principles of the blood; for tho' small the quantity, it repeats the same office so frequently, owing to the great rapidity of the circulation, that it seems fully equal to this effect; because in the course of a few minutes the same portion of metal may combine with Oxygen—part with it —and again on its return to the lungs combine with a fresh quantity.

On this principle, *that Iron parts with its Oxygen to the combustible materials of the blood*, we find an explanation for the fact mentioned by Dr.

Priestley, " that arterial blood acquired the colour of venous, when placed in vacuo. Mr. Thompson justly observes, that this alteration of colour must consequently be owing to some change which takes place in the blood itself, independent of any external agent ; and this change appears to me, to consist in this circumstance, that the Iron parts with its Oxygen to the Carbon and Hydrogen of the Blood, the dark colour of which is produced from a double cause; for first, the Oxide of Iron, when reduced from a higher to a lower degree of oxidizement, changes its colour from a bright red to a deep purple, while the Carbon becomes blacker in proportion as it combines with Oxygen.—This explanation will also account for the change of colour in the blood, which took place in the following experiment made by Mr. Hunter. He laid bare the Carotid Artery of a dog, and tied it in two places; on examining the blood situated between the ligatures while the animal was yet alive, it was found to have lost its bright arterial colour, and to have acquired the dark venal hue. The result was precisely the same as in the last experiment, for the chemical combinations here took place in the Artery, which, if the blood had been in motion, would not have been effected until its arrival at the veins. And on this principle that Carbon, Hydrogen, &c. have a stronger attraction for Oxygen than Iron, which parts with it in conse-

quence to these bodies, we perceive why Arterial blood becomes more rapidly and deeply coloured when left in contact with Hydrogen Gas. *

It appears unaccountable and contradictory, that blood, when left in contact with Oxygen Gas, should also gradually assume the colour which it would have acquired in vacuo, or in contact with Hydrogen; but the fact appears to be explained by the union of Oxygen with all the combustible materials of the blood; its combination in a greater degree with the Carbon producing so dark a colour as to obscure the bright red that would follow from the union of Iron with Oxygen; and this explanation is further supported by the fact, that after this change is once effected, Oxygen can no longer restore its colour. —Thus there is no difficulty remaining in that hitherto unaccountable circumstance, a change of colour in blood from a bright to a dark red, either when placed in Hydrogen or Oxygen Gas, the bases of which are directly opposite in their natures.

II. We have thus seen the use of Iron in conveying Oxygen to all parts of the body, and considered its first striking effect, the gradual and temperate disengagement of heat.—Of equal importance is the consequence that next solicits

* Thompson's Chem. Vol. v. p. 742.

our attention, that which in the chain of causes and effects is the first step to the production of the solids.—To explain this change, I shall make use of the following experiment of M. Fourcroy, which, for the sake of his observations, I shall relate in his own words: "The metallic Oxides "do not unite with the serum in general; but "*those which suffer their Oxigen to be easily disen-* "*gaged from them, and which adhere but feebly with* "*it*, such particularly as the red Oxide of Mer- "cury triturated for some time with the serum, "*pass again into the metallic state*, or *approach to it* "*more or less*;—at the same time the serous al- "bumen becomes *thick*, *opaque*, and *more or less* "*coagulated*. This experiment proves that Oxygen "favours the *concretion* of the *Albumen*, and that "the PLASTIC PROPERTY proceeds from the fix- "ation of this principle; so that the *concreted Al-* "*bumen* is *a real Oxide*. When the metallic Ox- "ides are highly oxigenated, and adhere very "little with the Oxigen, their action goes so far "as to burn and reduce the serum to a coal. By "this circumstance is explained the catheretic or "even caustic effect of the metallic poisons.—It "is however to be remarked, that the effect of "the Oxides of Mercury, and of their disoxi- "dation by the Serous Albumen, has a boun- "dary, and that it extends only so far as to "cause them to pass into the state of a black "Oxide." *

* Fourcroy's Chem. v. IX. 194.

If M. Fourcroy had used an Oxide of Iron instead of an Oxide of Mercury, no doubt the same results would have followed; and therefore, from his experiments and observations, I am led to conclude that nature has provided a metal for the purpose of conveying Oxygen to the capillary vessels which form the secretions, and deposit the necessary supplies. *Here*, by the gradual accession of the Oxygen, the blood becomes thick, concrete, and more adapted for supplying the waste of the solid parts of the body; but notwithstanding the deposition of this supply, the blood passes on to the veins far more glutinous and thick than it was in the arterial trunks, till at length it arrives at the lungs, where it discharges the chief of the oxigenated materials in the form of Carbonic Acid Gas. But if in the next inspiration the Oxygen were to unite at once with all the component parts of the Blood in the Lungs, it would again become thick, glutinous, and adhesive; and its flow would consequently be impeded through the trunks to the smaller branches, where its plastic and concrete consistence could only be required to renovate the body.—We therefore see the absolute necessity there is for one of the component parts of the Blood, and not the aggregate, to hold the Oxygen in combination, till it is wanted to produce the necessary changes.

By M. Fourcroy's experiment, we also learn the reason that venous blood is thicker than ar-

terial, and that the blood is capable of disoxigenating a metallic Oxide only to a certain degree, and that it cannot entirely reduce it to its metallic state.

It appears to me that the Skin performs precisely the same functions as the Lungs, and expels water and Carbon, and absorbs Oxygen; but not being of sufficient superficies, the Lungs are principally provided, to offer a greater extent of surface to the atmospheric air, and allow as large a quantity as possible to come in contact with the blood for so many useful purposes. It is universally understood that water is expelled by the Skin and Lungs; but that Carbon is given out by the former is not so generally known.—Mr. Cruickshank and M. Jurin, however, by their experiments proved this to be the fact.—The former found Carbonic Acid Gas in the air of a glass vessel in which his hand and foot had been confined for an hour; a candle burned dimly in it, and it rendered Lime-water turbid;* and M. Jurin discovered, that air which had remained for some time in contact with the skin, consisted almost entirely of Carbonic Acid Gas.†

Altho' there may have been no direct experiments to ascertain whether Oxygen is absorbed

* Cruickshank on Insensible Perspiration, p. 70 and 81.
† Encyc. Meth. Med. 1. 515.

by the Skin, yet those I have just mentioned are almost as conclusive of the absorption of Oxygen, as of the production of Carbonic Acid Gas; but it is unnecessary to repeat here the arguments in favour of this fact, as they are sufficiently enlarged upon in the explanation of similar circumstances in the Lungs.

Spallanzani found by experiment that the shells of snails and of the eggs of birds absorbed Oxygen; and Dr. Priestley discovered by his well known experiment that venous blood acquired the colour of arterial from Oxygen Gas as readily when these substances were separated by a bladder, as when they were in actual contact. Hence, without much assumption, we may conclude, if Oxygen can be absorbed by the shells of snails and eggs, and if it is capable of passing thro' the Coats of a bladder, that it is also capable of pervading the Cuticle, and uniting with the blood contained in the vessels of the Skin.

III. Such are the arguments which favour the idea that Iron is employed by nature to convey the Oxygen in a loose state of chemical combination to the different parts of the system, until it is dislodged from this union by bodies which have a stronger affinity for the Oxygen. The benefits resulting from which are, the general and equal development of animal Heat, and the concretion or thickening of the fluids gra-

dually increasing, till the Blood arrives in the capillary arteries by which they are deposited. The Metal and its Oxygen thus acting prominent parts in the process by which the fluids are reduced into the solids of animal bodies.

A third great use that may be derived from the Oxide of Iron is the stimulation of the muscular Fibre, but this I merely throw out as a conjecture without pretending to account for the mode of its agency by any remote chemical combinations. My reasons however for the supposition are grounded on the following circumstances.

All metals when Oxides, but in no other form, excite more or less the action of the living Fibre, and it is reasonable to conclude that the Metallic Oxide which is found suspended in such abundance in the blood must naturally exert this property.* We see it principally evinced in the contraction of the heart which has been hitherto simply attributed to the action of the Oxygen received in Respiration, as it ceases to beat if it is not supplied by that principle; but we have no *ground* to suppose that this could in a separate state produce an effect, which is satisfactorily explained by considering it in union with a metal.

* Iron is the only metal, whose Oxides are not poisonous to animals with red blood.

The conjecture is further supported by another circumstance; the colouring matter of the blood seems to attach itself to muscular Fibre, and Muscles are more or less deeply coloured in proportion to their degree of action; as is familiarly instanced in the difference that exists between the flesh of wild and tame animals, and between the more or less active parts of the same animal, for instance the thighs and breasts of fowls. The fact may be demonstrated with equal force in the human subject on many occasions, but particularly on the occurrence of Paralysis, when the limb deprived of muscular motion is pale, flaccid and colourless, while all the healthy limbs retain their accustomed hue and appearance.

It is besides observable and most Physiologists have noticed the fact, that a far greater proportion of blood is distributed to the muscles than can be necessary for their nourishment and support, as is evident on comparing the quantity of their blood with that of other parts of equal magnitude. This over-proportion of blood we may conclude must necessarily be in some way subservient to the accomplishment of their functions, and its end may be the conveyance of a substance capable of stimulating them to contraction; but what connection subsists between that substance and the nerves I am as little prepared to explain, as the communication between the nerves and the will.

We observe that individuals of a pale countenance and leucophlegmatic temperament (both of which circumstances seem to evince deficiency of the colouring matter of the blood) are dull, heavy, languid and inactive, and incapable of the same exertions that are made by persons of an opposite temperament. They are also little liable to inflammatory disorders but are much prone to dropsy and other diseases depending upon debility or deficient action of the vessels. While those of a sanguine temperament and of high complexions, evincing a large proportion of the colouring matter of the blood, are very prone to inflammatory disorders, and Hœmorrhagy from over excitement of the arteries, but particularly in those parts which are furnished with a large proportion of blood.

IV. A fourth great end fulfilled by the provision of an Oxide of Iron in the superior classes of animals, and that which is most connected with the subject of the present treatise, is the obstacle it affords to the production of parasitic beings, by the property it possesses of destroying the lives of animals with colourless blood.

On a consideration of the great mutability and tendency to decomposition of animal matter, and how intimately this circumstance is connected with the production of many of the

species of Zoophytes,* the provision of such an antidote in the more perfect animals seems to be absolutely necessary, in order to preserve them from being over-run like some vegetables with a host of parasites. A circumstance that seems wonderfully connected with that ordinance of nature, which impressed on all organized beings a tendency to increase and multiply. In order to the generation of the natural progeny, it seems to have been necessary to give all living animal and vegetable matter a general impulse to propagate life to infinity; yet, unlimited and unrestrained, it would have burst forth in a multiplicity of useless and incommodious forms, if Nature had not found the means of correcting the impulse without detriment to one of her prime and most momentous laws. The remedy by which she so exquisitely counteracts this evil in superior animals is the Oxide of Iron wherewith she impregnates their blood, and almost universally it is sufficient to fulfil her designs. But where thro' any fatality it exists in smaller quantities than is necessary for the purpose, Parasitic Beings are consequently produced. But that this provision is made by Nature as an antidote to those Beings, we may in some degree be satisfied from the following considerations:

* See p. 253. where the production of new animals during the decomposition of organized matter has been already considered.

The deleterious effects of all the Oxides or Salts of Iron on Animals of colourless Blood,* have been proved by experiment, on a variety of such animals, particularly slugs, snails, and the common earth-worm. Very different degrees of power are exemplified by the several preparations of the metal, yet very little accuracy or uniformity is to be expected in experiments of the kind, where, even if it were possible to be assured of the purity of the salts employed, a difference in the size, strength, and vivacity of the animal it is to act on, must always occasion uncertainty and variance on every repetition. I shall, however, give the result of a single experiment, in which all the salts of Iron I have been in the habit of using were brought to this test, each of which killed an earth-worm, about two inches in length in the space of time subjoined to its denomination.—

* Animals with colourless blood have not yet, I believe, been chemically examined with sufficient accuracy; but as Iron so quickly affects them as a poison, and from their want of colour, it may be inferred that they do not contain any. Neumann, the only chemyst who paid attention to the subject, found, by destructive distillation, that "Thirty-two ounces of dried earth-worms yielded thirteen ounces and a half of an alkaline fluid, one ounce of concrete volatile Alkali, and four ounces and a half of empyreumatic oil. The remainder burned in the open air afforded by lixiviation one ounce and a half of fixed Alkali. The earthy residuum weighed six ounces and a half, which, at that early period of Chemistry, Neumann did not possess the methods of examining."

Nicholson's Chem. Dictionary.

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|---|---|
| Sub-Oxy-Phosphate of Iron | 3 minutes. |
| Oxy-Phosphate - ——— | 6 minutes. |
| Arseniate* - - ——— | 20 minutes. |
| Phosphate - - ——— | 1 hour. |
| Carbonate - - ——— | 3 hours. |

Such is the result of one experiment; but I must premise, that in numerous trials, not two were alike. I once prepared some Oxy-Phosphate myself, which killed a large earth-worm in one minute; but in every other trial, I experienced the extraordinary and curious fact, that the Sub-Oxy-Phosphate of Iron, the very Salt of that metal which circulates in the Blood, possesses this property beyond all the other preparations; and that it retains this power in a remarkable degree while contained in that fluid, is evinced by a familiar occurrence, but which I believe has never been accounted for, I mean the death of leeches after they are glutted with blood, if they are not forced to disgorge it. This circumstance, though hitherto unheeded, proves that the blood itself is a poison to those animals, notwithstanding their eagerness for it.

To the same property it is owing that worms are not to be found in bogs where the different

* Arsenic uncombined with Iron did not produce the same effect in less than two hours.

Oxides of Iron exist in great abundance. And there is no medical man unacquainted with the efficacy of this metal in vermifuge medicines, its powers in destroying the tape-worm, the most formidable of intestinal worms being particularly celebrated.

The vermifuge power of the Salts of Iron cannot be attributed, like that of Calomel, and some other medicines given for worms, to an increased excitement of the Peristaltic motion of the Intestines, by which the worms are expelled; for Iron has, on the contrary, a constipating effect, and can only destroy those vermin by its property of acting as a poison upon animals of colourless blood.

Nature seems to have provided against the production of worms in the Intestines, by furnishing the bile with a quantity of Oxide of Iron; but experiments are wanting to satisfy us, that there is a deficiency of that principle in the bile at an early period of life, when the Intestines are so greatly infested by worms *. We have, however, some grounds to suppose that this is actually the case, as milk, the chief nou-

* The most accurate analysis of bile hitherto made was by Thenard, who read his ingenious experiments in 1805, to the national institute. He found, by repeated analysis,

rishment of children, does not afford on analysis any Iron, and their vegetable diet contains less than would be conveyed in animal nutriment. This circumstance however, like every other, we may rest satisfied is wisely ordered; for it is probable that the metallic Oxide, if furnished in the same proportion as in adults, would be too powerful a stimulus for the delicate fibre of infancy.

There has been often occasion to remark the tendency of the Uterus to generate Parasites, to which its deficiency of blood in the decline of life, or rather of the colouring matter of that fluid, must greatly conduce; but when by artificial means the due quantity is supplied, nature shakes off the incumbrance. The expulsion of

that eight hundred parts of Ox-bile yielded the following ingredients:

| | | |
|---|---|---|
| Water | 700 | |
| Resin | 43 | |
| Saccharine matter | 41 | |
| Albumen | 4 | |
| Soda | 4 | |
| Muriate of Soda | 3 | 2 |
| Sulphate of Soda | 0 | 8 |
| Phosphate of Soda | 2 | 0 |
| Phosphate of Lime | 1 | 2 |
| Oxide of Iron | 0 | 5 |
| | 799 | 7 |

Nicholson's Journal, vol. XII. p. 262.

Hydatids from this organ on the exhibition of the Oxy-Phosphate of Iron has been instanced on another occasion, and I shall not here repeat a a fault I have too often fallen into, where the same fact afforded me illustrations on more occasions than one; but I cannot resist the opportunity of elucidating the necessity of continuing the use of the medicine, even after the cure seems effected, by an extract of a Letter which I lately received from Doctor Reece, containing further particulars of a case published in the beginning of this volume, in which a relapse afterwards took place.

" The Lady, whose case of Hydatids I sent you some time since, has experienced a relapse; but on having recourse to the Phosphate of Iron has received the same benefit. She often suffers great pain in the region of the womb, which the pills of Iron allay effectually: indeed their effects are so immediate, that she says she is certain they are composed of Opium. In the Medical Spectator I have published a case of disease of the womb, in which the Oxy-phosphas Ferri was unsuccessful. The Patient certainly, however, voided Hydatids after taking it ten days."

Another proof in support of the opinion under consideration may be adduced in the effects of the salts of Iron upon Cancer, which if they do not remove the disease, seldom fail to

ameliorate the condition of the Patient, by retarding its progress, and alleviating almost instantaneously the characteristic lancinating pains, which I have supposed to arise from the force of suction, by which this Parasite draws its nourishment from the parts in which it is imbedded. This is probably performed by its roots; and it is curious to remark in Cancer of the Breast, how they avoid the muscular parts which are furnished with the colouring matter of the blood, while they extend themselves thro' the fat and cellular membrane to parts at a considerable distance, often stretching by the axilla to the back, and by the Clavicles to the neck, while the pectoral muscles which lie immediately under them remain unaffected. This fact naturally reminds us of a similar circumstance noted by M. Buffon, and many naturalists, with respect to plants, the roots of which they remark will creep aside to avoid bad earth, or to approach good; * but Doctor Darwin thinks this circumstance is better accounted for, "by supposing that the roots put out no absorbent vessels where they are not stimulated by proper juices; and that an elongation of roots in consequence only succeeds, when they find proper nutriment. †" This circumstance, in my mind, applies equally

* Hist. Nat. tom. III.

† Phytologia, p. 18.

well to the animal Fungus Carcinoma, as it does to plants; nor is it any objection to this opinion that muscles themselves are liable to Cancer: circumstances may occur to cause the most unfavourable soils to produce plants, but they are ever afterwards stinted in their growth, and never arrive at the size they would attain in a favourable situation. In the same manner Carcinoma may arise in muscular flesh after an injury to its organization, sufficient to cause a portion of it to run into decomposition; but the surrounding parts full of life and vigour, throw out a highly vascular Fungus which encompasses the new-formed Carcinomatous substance, retards its growth, and probably, in some instances, destroys it altogether. But this vascular production, termed Fungus Hæmatodes by Mr. Hey, on account of the great quantity of blood it contains, increases to so great a degree as to engage the entire attention of the Surgeon and Patient, but which can never be removed by Knife or Caustic, as long as the exciting cause remains. *

But whatever be the profusion of the colouring matter of the blood, a spontaneous separation of the Carcinomatous mass is an occurrence of which there is scarcely an example to be found; one of these rare cases however we read

* See Case XLVI.

in Wiseman.* A woman thirty-six years of age had in her Breast a round hard tumour which he terms a cancerous wen, and while he was preparing to extirpate it, the skin from over-distention gangrened, the tumour which he says was composed of *cancerous flesh* was discharged peice-meal, and she never afterwads had a return of the complaint. In a similar case related by M. le Dran,† of a Lady who had Cancer in her Breast, the tumour gangrened and separated in two days, and was so very extensive as to weigh seven or eight pounds; but the disease returned, and in less than a month appeared in the same state as before the gangrene.

Mr. Levingstone relates another case of spontaneous separation in the Edinburgh Medical and Surgical Journal, Vol. I. The Patient was a Seaman and affected with a Cancer of the Testicle and Cord; but while it was in an ulcerated state, Scurvy supervened with *frequent Hæmorrhage* which conjointly reduced the Patient to the lowest ebb, but he recovered of the Cancer with the loss however of the Testicle.

Mr. Home also relates a case of similar spontaneous separation of a cancerous tumour of the Breast. The disease was in an ulcerated state,

* Surgery, p. 111.

† Traite des Operations, p. 399.

discharging a large quantity of thin matter and attended with frequent and *alarming Hæmorrhage*, which greatly impaired the Patients state of health at a time that she was daily expected to lie-in; " under these circumstances she was brought to bed, became extremely low, the pulse sunk, and it was hoped, by those who were interested about her that she might die. When she was in this low sate, the Breast and the tumour near the Axilla began to mortify; and the whole surface, from the Axilla nearly to the sternum appeared like an eschar, the depth of which was not then known. Her health was still bad, but it was on the whole rather getting better. A separation took place round the edges of the dead part, and in a few days the whole dead part consisting of the Breast and Tumour came out, leaving the pectoral muscle quite bare." * In the sequel of the case we find that the complaint re-appeared in the edges of the sore, and that finally the Patient fell a victim to the disease. But with respect to the spontaneous separation of the diseased mass Mr. Home is of opinion that a fever, under which the Patient laboured at that period, " producd the same effect as the preparations of Arsenic used for the extirpation of Cancerous Breasts."

It is the opinion of some medical men that a spontaneous cure of Carcinoma of the Face, or

* Home on Cancer, p. 91.

of Ulcers judged to be allied to Cancer, not unfrequently occurs; but that this circumstance only takes place when the disease has made its attacks before the age of Puberty, and that after that change is induced in the constitution the disease gradually disappears on the approach of manhood. There may be some truth in this opinion, for I myself have seen one case, which seemed in a great degree to confirm it. A Gentleman who had come from Limerick to consult me, was greatly disfigured by an extensive Ulceration which had commenced upon the Ala Nasi when he was but ten years of age. It destroyed the greater part of his Nose and left deep seams upon both Cheeks, but ceased to extend its ravages about five years after its commencement. He had used a great variety of applications but did not attribute his recovery to any of them. A redness remained on the Cicatrices of the Ulcers, which excited so much uneasiness in his mind, as to occasion his application to me, though it was ten or twelve years after they had healed.

In Wiseman and Le Dran's cases we are afforded no clue from which we can conjecture the cause of so uncommon a circumstance. In Mr. Levingstone and Mr. Home's cases, there was frequent Hœmorrhage, and in one the system was overwhelmed with Scurvy, and in the other

affected by fever, but of what nature we are not informed.——Whether those disorders could communicate a virus destructive of the vitality of Carcinoma, or that the constant effusion of *blood* on the Cancerous parts, could produce such extraordinary effects, or whether in the case on which I was consulted, any accumulation of Iron in the system took place after the age of Puberty, are all conjectures for which there is so little support, that I shall not venture to do more than throw them out as hints for the consideration of others.

I lay no stress on these cases, and mention them as they are curious rather than as corroborations of my arguments. It would be more to the purpose to strengthen them with such facts as I could adduce; but this is unnecessary, as every page of the book is replete with instances of the growth of Cancer where there seemed to be a deficiency of the Ferruginous Oxide of the blood, and examples of its extinction or retardment where its antidote was furnished in time. We have therefore little room to doubt that if the Ferruginous Oxide of the blood is deficient, Parasites of every description may start into existence, and can only be dislodged by restoring the metal to the system in sufficient abundance. And that on the contrary such parts of the frame as are well supplied with blood, or

such persons whose blood is sufficiently oxidated, are exempt from the ravages of those Beings, unless they are produced by accidental injury, in the manner I have already endeavoured to explain; and if thus produced, that they are more slow in their growth, and more readily exterminated, than in persons of an opposite temperament, or parts less abundant in blood.

It may here be naturally inquired why stimulating preparations are prejudicial in this disease, as more of the Ferruginous Oxide of the blood would be likely to come in contact with the Cancerous mass, in consequence of an increased circulation; but so many complicated circumstances take place under such excitement, that it is impossible to find a satisfactory explanation. Heat and moisture are produced by the increased force of the blood and action of the vessels, than which nothing can more conduce to the growth of Parasites; and pain and irritation must at all events be the consequence around the extraneous body whether living or dead, and it is natural for the Patient to think that whatever produces pain must be injurious. Yet even this admits a doubt, as the very irritation he complains of may be the fore-runner of Ulceration; an event that checks, as we have already seen, the progress of the disease, and is an effort of nature to throw it off.—But these and other difficulties

will, I hope, not long maintain their ground, if the design of a few benevolent and active individuals is accomplished of establishing a Cancer Hospital in this City.*

* See a plan of the intended institution at the end of the work.

## CHAPTER VII.

### *DISEASES ARISING FROM THE EXCESS OF THE OXIDE OF IRON IN THE SYSTEM.*

IF the Iron of the blood acts so powerful a part in the production of animal heat—in the development of the Solids—in the stimulation of muscular fibre, and in the prevention of the generation of Parasites, its excess or deficiency must cause a derangement in the system productive of a great variety of disorders.

It would require volumes to comprize a regular disquisition upon the different diseases depending upon a principle which acts so important a part in the animal œconomy. I shall therefore confine myself to a few leading facts in the most

prominent of those diseases which seem to support the conclusions I have ventured to form with respect to the uses fulfilled in the system by the Oxide of Iron.

Previous to the consideration of diseases, which seem to arise from an excess *or* deficiency of that principle, it would be right to discriminate between the temperaments, which are predisposed to either of those classes.

That constitution which appears to have an excess of the Ferruginous Oxide, is marked by a high complexion, celerity of thought and action, remarkable irritability of fibre, and a quick strong pulse—in fact it is the sanguine temperament. The reverse of this, the constitution which seems to have a deficiency of the Oxide of Iron, is marked by a countenance pale and bloated, the eyes dull, the mind heavy and slow in receiving and forming ideas; there is little irritability of fibre, the pulse is small and feeble, and languor betrays itself in every action. The Leucophlegmatic temperament approaches nearest to that I would describe.

I would not have it understood that I think these two temperaments depend entirely upon the proportion of the Oxide of Iron in the system; other causes at present inexplicable no doubt tend towards their production. But when we see the

colour of the countenance so much connected with the degree of mental and corporeal action of an individual, and since this complexion depends upon the colouring matter of the blood, which is Iron, we cannot but place some dependance upon an explanation which embraces the most prominent circumstances attending each of these temperaments. It might be said that an individual of one temperament possesses in a superior degree the vital principle by which great vivacity of mind and irritability of body is produced; while in the other a deficiency of the powers of life is betrayed, and the dullness and inactivity of every faculty is the consequence. But this explanation cuts short every enquiry and is a tacit acknowledgment of our ignorance. The healthy temperament lies midway between these two, and the individual possessing it has neither the florid hue and vivacity of the one or the pallid, bloated and listless countenance of the other. His mind is better qualified than either for a continued exertion, and the temperate action of his fibre is marked by the regularity and moderation of his pulse.

I. In the temperament first descibed, wherein an excess of the Oxide of Iron exists, there is a constant predisposition to inflammatory diseases, on account of the stimulating properties of that principle upon the arterial system. Chalybeate medicines, and mineral waters, which are too

promiscuously ordered for every constitution evince, even in small quantities the most injurious effects upon persons of this temperament. I have known many instances in which their exbition has been followed by severe head-aches, throbbing of the temples, hurried respiration and an accelerated pulse, effects which they assuredly produce in persons of this description at that period of life, when the energies of the system have arrived at their full maturity. These facts did not escape the sagacity of my friend Doctor Toole, who in his own discriminating practice, had frequently occasion to lament the undistinguishing use of those medicines in the hands of others.

We often meet with persons such as I have described, but particularly Females, who do not exercise in proportion to the quantity of nourishment they take, and are consequently affected with constipation of the bowels, loss of appetite and indigestion, followed by dejection of spirits, and languor of the entire frame. In this state an aversion to food seems almost to indicate a Vis Medicatrix Naturæ, but it is too frequently the practice, in place of assisting nature to thwart and encumber her by the exhibition of constipating Chalybeates and bitters, with the false view of giving tone to the digestive organs and the system at large. The complaint is thus inevitably aggravated, and the mischief increased

to so great a degree that the liver or some other viscus becomes organically diseased.——Then indeed the complaint may well be accounted complex and difficult of cure, which in the beginning might have been easily removed by the use of Cathartic medicines, persevered in for a sufficient interval to relieve the bowels of their accumulated contents, and the observance of a regimen consisting of light nourishing diet, regularity of living, and exercise proportioned to the strength of the Patient.

II. But unconnected with any disorder of the bowels, an excess of the Oxide of Iron creates a derangement that is chiefly felt in such parts as contain the greatest proportion of blood, the head and chest.

Persons of the sanguine temperament, but more particularly in youth, are prone to severe head-achs, accompanied with flushing of the face and forcible pulsation of the temporal arteries. These head-achs which are so evidently caused by too rapid an action of the vessels of the head, are often removed by the rupture of some of the small vessels, spread upon the Pituitous membrane of the nose, which being less supported than others are forced open and an effusion of their contents affords a temporary relief.

III. Young persons of the sanguine temperament and of high florid complexions, who are subject to these head-achs and bleeding at the nose, are almost proverbially known to be predisposed to Phthisis Pulmonalis, which is often so rapid in its progress as to have received the vulgar but not unappropriate term, a galloping consumption. On this interesting subject I shall I hope, be excused for enlarging a little.

The sanguine and leucophlegmatic temperaments, altho' the one is directly the reverse of the other, are equally predisposed to Phthisis Pulmonalis, but I have no doubt that they are affected by two species of that disease, as distinct and diverse as these constitutions and requiring altogether a different mode of treatment. These two species may be appropriately distinguished by the terms FLORID and TUBERCULAR, on account of the appearance of the countenance in the one, and the presence in the lungs of those bodies termed Tubercles in the other. The florid species to which persons of the sanguine temperament are so subject, most generally makes its attacks in youth; but it occurs likewise frequently before that period, as well as during the vigour of manhood. A fixed obtuse pain in some part of the chest attended with cough, heat and feverishness, is in general the signal of the attack; at other times, the appearance of bright arterial blood, thrown from the lungs by coughing gives the first alarm. The progress of

the disease is rapid, the Patient becomes affected with constant cough by which Pus mixed with blood is expectorated, hectic fever succeeds, his frame becomes emaciated, and he is frequently carried off by the disease in three or four months from its first unsuspected attack, and whole families of a similar constitution thus fall victims to this species of Phthisis, whose greatest violence is directed against persons of the most blooming and promising appearance. This particular disorder is evidently the consequence of a too rapid action of the vessels of the lungs. The motion of the blood is undoubtedly accelerated throughout the entire body, but its dangerous effects are principally felt where blood-vessels are most numerous. Abscesses are soon produced from increased vascular action in parts like the lungs composed of congeries of vessels. Their formation is not attended with much acuteness of pain and probably the small proportion of nerves in these organs admits of the unobserved and insidious progress of the disease. A similar increased arterial action accounts for the rupture of vessels, and the consequent spitting or coughing up of blood, which frequently repeated, lays the foundation of an Ulcer difficult of cure on account of the access of air and the motion of the lungs, and there is reason to believe that the disease much more frequently consists of this Hœmorrhage and Ulceration than of Abscess.

But the remote cause of the destructive acceleration of the fluids, from which the florid species of Phthisis arises is an excess of the Oxide of Iron in the blood, which by stimulating to overaction the muscular fibres of the heart and arteries causes I may say, a fever of the entire body and a local inflammation of those parts where the blood vessels are most numerous, which may be retarded by spontaneous Hœmorrhage, but finally terminates in suppuration and death.

Abscess may undoubtedly form in the lungs of persons who cannot be said to belong to the sanguine temperament, and have not, according to the principles I have laid down, an excess of the Oxide of Iron in the blood. But such persons are not constitutionally predisposed to this species of Pulmonary consumption. Inflammation is produced by external causes, and particularly by a sudden change of temperature; but they do not carry within them, as those of the sanguine temperament, the very cause of the disease.

It is well known that inflammation of the lungs or their investing membrane produced by external causes, often terminates in suppuration. When organs of such import to life are thus affected, no doubt great danger is incurred, but in those *accidental* consumptions perfect recoveries not unfrequently take place after the abscess has opened into a branch of the Trachea, and

the matter is expelled by the mouth; or as less frequently happens, when it points between the ribs, and is either opened by the Surgeon or bursts spontaneously. In this simple uncomplicated species of Phthisis unexpected recoveries have been known to take place, even after the Patient has been wasted by hectic fever, and no hopes of life remain, a circumstance tending to prove that the constant motion of the lungs is not of itself sufficient to prevent an Abscess or Ulcer situated in these organs from healing.—— But I believe such favourable terminations are seldom known to attend either Florid or Tubercular Phthisis, which may be deemed constitutional diseases, if a predisposition to them deserves that name, as the entire mass of blood contains, in one an excess, and in the other, a deficiency of the stimulating principle.

Unconnected also with the excess or deficiency of this principle, is that species of Phthisis Pulmonalis, which attends persons of narrow chests; but as these are of every temperament, it follows that in them the predisposition to consumption is not constitutional, and must therefore be occasioned by the small capacity of the Thorax; and this local cause seems sufficient for the production of the disease, when we consider that such persons are most liable to its attacks at that period of life, when the body has arrived at its full extension and growth, at which juncture a

nice equilibrium takes place between the Aorta and Pulmonary vessels. If the latter should therefore be constrained and prevented from dilating to the force of the heart, congestion of blood will occur in these organs, and inflammation, the precursor of abscess be produced, or a rupture of the vessels and consequent Hœmorrhage. Sedentary persons who incline forwards the greater part of the day, during study or any other occupation by which the cavity of the chest is diminished, and the lungs consequently compressed, are liable on the same account to Phthisis Pulmonalis.

If these distinctions be founded in nature, the mode of treatment necessary to be adopted becomes clear and perspicuous. The indications to be pursued in the first species, that which arises from a too rapid action in the arterial system, owing to an over-proportion of the metallic Oxide in the blood is, 1. To diminish the quantity of Iron in the system by making use of such articles of diet as do not contain Iron, or have it in the smallest proportion. 2. To introduce into the system, such substances as have a greater affinity for Oxygen than Iron, that thus the Iron in the blood may be kept in a low degree of Oxygenation, and consequently rendered less stimulating; for it is only in combination with Oxygen that a metal is capable of acting as a stimulus to the living body. 3. If the pressure of symptoms

require immediate relief—to remove a portion of the circulating fluid, and to diminish the sensibility, or irritability of the solids, by the introduction of medicines capable of producing a sedative effect.

The first of these indications may be answered by the adoption of a milk and vegetable diet. It has been already stated, that Iron has not been discovered in milk, and it is probable that very little exists in esculent vegetables, on account of the little excitement they cause in the system; perhaps colourless vegetables, as Turnips, do not contain any, but a careful analysis is much wanting, in order to determine the proportion of this and other principles in different species of nutriment. It has been already ascertained, that animal flesh contains Iron in very considerable quantities,* therefore the use of meat ought to to be positively denied in Florid Phthisis; but no doubt that metal is in very different proportion in the various kinds of animal food, and

* "The coal which remains in the retort after the distillation of animal matter, is sometimes *brilliant*, and of a *metallic appearance*, and is then found analogous to the Carburet of Iron,"—"the character of incombustibility, which so eminently distinguishes the animal coals, proceeds from the *little Carbon* they contain, the density which it preserves in them, its union with the Phosphates of Soda and of Lime, and the Oxides of Iron and Manganese, which envelop and condense it."

Fourcroy, p. 70—v. IX.

varies according to the age and habits of the animal. The flesh of young animals, which is white and tender, contains less than that of the full-grown, which is red and strong, and, as already remarked, the difference seems more striking on comparing the flesh of tame and wild animals of the same species.

The small quantity of Iron in animal food will, perhaps, be thought unequal to produce so considerable an effect, as is here ascribed to it; but it should be recollected, that tho' small, it exists in a state adapted for combining with the blood, and ready to enter into union with the living animal body, on which its effects are more sensible and immediate, in consequence of the state of minute division in which it exists in flesh. The virtues of many mineral waters can only be attributed to the same cause; but the Iron they contain, tho' so very small in quantity, exists in a state of such minute division, and in such combination with other matters, as would be difficult or impossible for art to imitate, that it is, perhaps, more effectual than a much larger quantity less minutely divided, or less happily combined.

The second indication, viz. the introduction into the body of such substances as have a greater affinity for Oxygen than Iron, will be partly accomplished by the use of vegetables, as they contain a large proportion of Carbon, a principle

capable of disoxygenating any metallic body at a suitable temperature. An excess of this substance in the blood, must keep the Iron at a low state of Oxidation; but to produce this effect more fully, pure Charcoal, or in other words, Carbon, as little oxidated as can be procured, may be taken in large quantity in the form of pills *.—Camphor is a substance which has a great affinity for Oxygen, and therefore its exhibition in as large doses as convenient, would have a similar operation. Mr. Lane informs us, that one grain of Camphor dissolved in an adequate proportion of Alcohol, and mixed with one hundred grains of Oxide of Iron, will by a red heat render them all magnetic. †

* In a conversation with M. Von Millingen, Surgeon of the Queen's German Regiment, on the subject of Phthisis, I accidentally mentioned my experience of the remedies I have mentioned, and of my views in ordering them. He informed me that he had for several years been in the habit of prescribing Carbon in large doses in pulmonary complaints, for the soldiers of his regiment, whenever he suspected the presence of Phthisis Pulmonalis, and that he experienced the happiest effects from this treatment; a practice which he learned from an intelligent Physician in the Western part of the County of Cork, whose name I regret to have forgotten: but I was informed, that during a long series of years this Gentleman had prescribed Carbon with the greatest success in consumptive cases.

† Tilloch's Phil. Mag. v. XXIII. p. 254.

It is not imagined, that at the temperature of the human body so rapid a disoxigenation of the metal could be effected; but probably it would as fully, tho' more slowly, take place. If the action of Camphor on the living body can thus be explained, the old dispute, whether it is a stimulant or sedative, may be satisfactorily laid at rest; for tho' it is not of a sedative nature itself, yet it produces indirectly a sedative effect on the living body by taking the Oxygen from the Iron, and thus rendering that metal less stimulating.

I have already stated the opinion of M. Fourcroy, that the Iron of the Blood is united with Phosphoric Acid, but that there is an excess of the metallic base from the presence of Soda in the blood; if then the quantity of Soda was encreased, so as still farther to disoxygenate the metal, the stimulating property of the latter would be consequently still farther diminished. And if the most incurable diseases arise, as has been conjectured, from an excess or deficiency of the remote component parts of the body, the deficiency of the necessary proportion of Soda might be a principal cause of a predisposition to inflammatory diseases. The introduction, therefore, of Soda into the system, would be a powerful auxiliary in diminishing the stimulating quality of the blood, which not only in the disease under consideration, might be attended

with the greatest advantage, but in those that depend upon an increased or inordinate action of the muscular fibre, for instance, Tetanus and Convulsions, and in many other diseases which are nearly allied to these; for, as before observed, the colouring part of the blood is found in great abundance in muscles, and no doubt is subservient in some way, with which we are at present unacquainted, to the performance of their functions.

Long after these ideas struck me, with respect to the subserviency of the ferruginous oxide to muscular motion, and the consequences that may arise from its excess or deficiency, I chanced to meet in the third and fifth volumes of the London Medical Journal, the papers of Doctor Stutz on the Uses of the Fixed Alkalies in Tetanus and Convulsion, and it gratified me not a little to find my principles so far confirmed by the success of this remedy, that in these disorders it was generally known and adopted on the Continent. It is however painful to reflect on the slowness with which useful knowledge is propagated; seven years have elapsed since Doctor Stutz's discoveries were published in these countries, and as yet their value is but little known.

I lately learned by accident, that Doctor Hartigan and Mr. Barrett have successfully

treated two cases of Tetanus with Fixed Alkali, and, perhaps, these are the only cases that have been so treated in this part of the empire; it is true other remedies were subjoined, but there can be no doubt where the efficacy lay.

The introduction of Hydrogen with similar views into the system by the use of Alcohol or Æther, would be injurious, on account of the temporary excitement they produce when taken into the stomach, which seems to be owing to their immediate effect on the nervous system, and not to any change they occasion in the circulating mass.

But probably the most powerful means of reducing the metallic Oxide of the blood, and consequently of diminishing vascular action, consist in the diminution of the proportion of Oxygen Gas in the air breathed by the Patient; on which account his residence should be fixed in the most crowded part of a metropolis, where the Oxygen Gas of the atmosphere is constantly in a reduced state, on account of the numbers who respire it, and give in exchange Carbonic Acid Gas.

The stable and cow-house have been proposed by Dr. Beddoes as a residence where the same advantages may be gained; but as it might not be easy to prevail on a Patient to become a con-

stant Inmate of so inconvenient a mansion, and as much benefit could not be expected from an occasional visit, to the fastidious Invalid the succedaneum I have offered may prove equally acceptable.

The use of factitious airs, as proposed by Dr. Beddoes, particularly of Azotic and the various species of Hydrogen Gasses, affords a powerful auxiliary. But as Carbonated and Sulphurated Hydrogen Gasses escape in great abundance during the putrefaction of animal matter, it might be greatly advantageous to have the Patient's residence near a market or slaughtering-house; for it appears to me that benefit can only be expected, where the Patient constantly inhales air that is deficient in Oxygen Gas, and at the same time is rendered impure by the addition of other gasses whose bases have an affinity for Oxygen.—Persons who constantly reside in the crowded parts of large cities, tho' well fed and cloathed, sufficiently demonstrate, by their pallid complexions and languid state, that the very air they breathe disoxigenates their blood, by the Hydrogen and excess of Carbon and Azote that adulterate it.

But the extraordinary disease which affected all the workmen of a coal mine near Valenciennes, affords the most remarkable proof of the effects of the Hydrogen Gasses in depriving the

blood of its red colour, and the muscular fibre of its irritability. Professor Halle, of the school of medicine at Paris, who relates the history of the disease, states that the Patients were of a colour like white wax which had been long kept, and that the slightest exertion produced fatigue, and a sense of suffocation.

These circumstances sufficiently point out the advantages which are to be gained by breathing air whose Oxygen Gas is reduced, and which at the same time contains the various species of Hydrogen Gasses, in a disorder which is accompanied or rather indicated by a remarkable floridity of countenance, and an increase of action in the heart and arteries, circumstances that evidently arise from one and the same cause, an excess of the metallic Oxide with which all animals of hot and red blood are furnished.

We have now to consider the third indication, viz. the removal of a portion of the Blood, if the pressure of symptoms requires immediate relief, and the diminution of the irritability of the solids, by the exhibition of sedative medicines.

If the degree of general fever, floridity of the countenance, spitting of blood, pain in the chest, attended with rigors, evince that inflammation actually exists in the Lungs, the most decisive measures should immediately be taken in order

to prevent its terminating in suppuration or hœmorrhage. The most powerful of these is evidently the detraction of blood from the system, which while it diminishes the quantum ofthe irritating fluid, lessens also the vigour and strength of the solids by which it is propelled. This indication will be greatly assisted by the use of sedative medicines, which will diminish the irritability of the fibre, or in other words will render the fibre less susceptible of the impression of stimuli, and concequently retard the circulation of the blood. Digitalis is undoubtedly the sedative to be preferred for this purpose, as all others on their first introduction cause an increased action of the vascular system.

If suppuration has actually taken place, the means stated under the heads of the first and second indication may be sufficient, and by their adoption the predisposition to inflammation, and the further formation of abscess will be removed. The disease may then be considered as reduced to that species of phthisis which is owing to an *accidental* attack of inflammation, not dependant upon any constitutional cause, and from which perfect recoveries often take place.

Altho' the two simple forms of Phthisis Pulmonalis I have pointed out form no part of the present subject, yet it is not altogether inexcuseable to mention that the remedies which will

probably prove most efficacious in the accidental species are those which are capable of diminishing increased vascular action, Venesection and Digitalis.—In parts so full of vessels as the Lungs, the slightest cause will continue increased vascular action; and if the abscess should not have opened, an accelerated motion of the fluids of the part will only augment the quantity of pus. But if it has discharged its contents, and is in the state of an open sore, the production of good pus, and consequent formation of granulations, depends upon a moderate healthy action of the vessels. Sores in other parts will often continue to discharge from mere habit, and expectoration of pus seems often to proceed from Ulcers of this description in the Lungs. In such cases, the Elixir of Vitriol, once so celebrated for the cure of phthisis, is an appropriate and useful remedy; but, like many others, has been discarded as useless, because it has been indiscriminately exhibited in every species of the disease.

Bark has, I believe, been oftener found mischievous than beneficial in such instances; because Bark, though of great service to simple Ulcers in other parts of the body, yet, when situated in the Lungs, they are injured by its property of quickening the circulation. Nauseating medicines have been extolled by some; but if benefit follows their use, it is probably by retarding the circulation of the blood, a

constant effect of those medicines; and the amendment so frequently observed to follow a voyage by sea, may perhaps be owing to the constant state of sickness it produces, and the consequent retardation of the blood.

I have only to add, that in Phthisis depending on the small capacity of the Thorax, those means seem most desirable which would diminish the force of the circulation, and obviate the consequences of congestion in the Lungs; so that in fact the remedies indicated in the three species of Consumption noticed in this Chapter are nearly alike: but those that will be found useful in the remaining species, of which I am to treat in the next Chapter, are directly opposite in their nature and effects.

## CHAPTER VIII.

### *DISEASES ARISING FROM A DEFICIENCY OF THE OXIDE OF IRON IN THE SYSTEM.*

I SHALL commence my inquiries concerning the diseases arising from a deficiency of the Oxide of Iron in the system, with that species of Phthisis which has been termed Tubercular Consumption, as it displays, if not a close connection, at least a strong resemblance, to the subject we have just concluded.

I. The first symptom of Tubercular Consumption is a slight cough, not attended with febrile symptoms. It is difficult to distinguish one cough from another; but that which is caused by Tubercles has a peculiar hollow sound, continues for months, and frequently for years, leav-

ing the Patient in Summer, and returning at the approach of Winter; and is esteemed of so little consequence by the Patient, that it is regarded as merely the effect of a transitory cold; but it is accompanied with stitches or sudden pains darting thro' the chest, which, however alarming, are ascribed to the same cause, and equally neglected. In this insidious manner the disease steals on imperceptibly; the countenance becomes pale, wan, and delicate, and frequently has a bluish cast; the frame, even in this early stage, becomes thin and emaciated, and languor and inactivity prevail in so great a degree, that the Patient grows averse to the slightest motion or exercise; and the exertion of ascending stairs is particularly fatiguing, and attended with a sense of suffocation. The cough gradually increases, and becomes more than usually troublesome at night. Mucus only is expelled for a length of time; but the expectorated matter at length changes its nature and appearance, and a discharge takes place, which can neither be termed Mucus or Pus, and is essentially different from both. I cannot describe the appearance of this discharge better than in the words of Dr. Stark, whose freedom from prejudice, and talent for observation, leaves great cause to regret that he was cut off so early in life. "The spitting or expectoration," (he says) "is commonly very *thick* and *viscid*, of an *ash-*

*colour*, with a *slight tinge of green*, and contains many air bubbles; sometimes it is yellowish, and in small round masses, which probably come from small vomicæ; now and then, though rarely, it is streaked with blood. The quantity expectorated is generally inconsiderable in the beginning, but afterwards increases to about half a pint, or a pint, in twenty-four hours. In those cases, where (upon dissection) the large vomicæ were found almost empty, the spitting, towards the end, had been in very small quantity.

As the spitting is, perhaps, the most certain criterion of vomica, it will be proper to enquire into its peculiar character, that it may be distinguished from pus and mucus: two substances which it greatly resembles. All of them, when free from air bubbles, sink in water. Pus is easily diffusible in it, by gentle agitation, but in a few hours falls to the bottom. Mucus cannot be equally diffused in water without strong agitation, but when diffused, forms with it a permanent ropy liquor. The spitting of consumptive persons is diffusible in water more easily than mucus, and like that, at first forms with it a permanent ropy liquor; but which, in a few days, deposits a sediment in the same manner as pus; the liquor, however, still continuing ropy, and resembling mucus and water."

Before this expectoration of viscid matter takes place, respiration becomes more hurried, a general soreness of the chest is complained of, the pulse becomes quickened, and there is *symptomatic* fever commonly present for several months, before hectic fever can be said to appear. This state may be considered a striking proof that inflammation has taken place in the lungs, preparatory to an effort of those organs for the expulsion of the Tubercles, an event which at length takes place, as is manifest in the viscid nature of the discharge, evidently the Tubercles themselves in a state of dissolution, and in the frequent expulsion of solid lumps of hard consistence, mixed with the matter expectorated.

It is unnecessary to trace the symptoms farther: hectic fever from disease in the lungs, is like hectic fever from disease in other parts, and has the same fatal termination. But it may be useful to contrast the symptoms of tubercular with florid consumption.

Phthisis which is caused by Tubercles commonly attacks persons of pale sallow countenance, and large pupils, which indicate little irritability of fibre. The period of life most liable to the disease is from thirty-five to fifty. Florid phthisis, on the contrary, affects, as we have seen, persons of a high ruddy complexion, of great irritability of fibre; which is marked

by the activity of their intellectual as well as corporeal powers, and the period of life is in general from ten to twenty-five.

The progress of Tubercular Consumption is slow. Its fatal termination is often protracted from year to year, and not until its latter stages is it attended with fever; while the Florid species is rapid in its progress, often terminating in death in a few months after its appearance, and is attended with fever from its very commencement.

The pains in Tubercular Consumption in its first stages are not fixed to any particular part, but dart suddenly thro' the chest, and hence are generally denominated flying or shooting pains or stitches. On the contrary, the pain in Florid and Simple Phthisis, is in general fixed to one particular spot, or the chest is affected with a sense of fullness.

Hœmorrhage from the Lungs, or spitting of blood, *never* takes place in the commencement of Tubercular Consumption, but is not unfrequent towards the termination; while it is probably one of the first symptoms of the florid species.

In Tubercular Phthisis, the short hollow cough which distresses the Patient for a long space of time, brings up only the natural mucus,

secreted for lubricating the air vessels of the Lungs; but at length, on the accession of heat and pain in the chest, attended with symptomatic fever, the matter expectorated is changed to a greenish ash-colour, and becomes of a thick viscid consistence, frequently containing small solid substances. The expectoration in the florid species, on the contrary, soon after its commencement, consists of pure pus, which is never the case in the other; it is, however, very frequently streaked with blood.

Such are the leading distinctions between the two species of Phthisis Pulmonalis; but, because there are necessarily many symptoms common to both, they are unhappily confounded with each other. These symptoms are cough, pain, increased expectoration, difficulty of breathing, hœmorrhage, wasting of the body, and hectic fever.—But it is evident, that a just diagnosis is more easily formed, in all doubtful cases, by attending to the symptoms and constitution of the Patient at the commencement, than at any other stage of a disease; for, in the instance before us, both species, tho' wide asunder at first, gradually approach each other in their symptoms; and, when hectic fever is induced, distinction is at an end.

Simple Phthisis, or that arising from a malformation of the chest, or an attack of infla-

mation, is evidently more allied to Florid than Tubercular Consumption; but as there is no inherent constitutional cause to hurry on the disease, it is consequently more slow in its advances. Its progress depending on a variety of circumstances, the principal of which seem to be the weakness or vigour of the constitution, abstinence, or excess in living, and the mildness or inclemency of the weather that prevails.

Tubercular Consumption is very generally supposed to be a scrophulous disease; but the only argument I have met with in favour of this opinion deserving of serious attention, is, that persons of little irritability of fibre, a disposition indicated by a large pupil, are equally martyrs to Scrophula and Phthisis, a circumstance, however, by no means sufficient to establish the identity of the two diseases. It is no argument in favour of the opinion to say, that persons who in their youth have shewn a scrophulous habit of body, by swellings of the lymphatic glands, are frequently in manhood the subjects of Phthisis; the same argument might be brought to prove the identity of any two diseases, however dissimilar in their nature. But the fact is, that persons of a scrophulous habit are not more subject to tubercular Phthisis than others. I shall not in proof of this assertion appeal to my own scanty opportunities of observing the disease, but shall adduce the testimony of an Anatomist, whose familiar acquaintance with

the natural and morbid structure of the body, stamps his evidence with the highest degree of credit. Mr. Carlisle, in a letter to Doctor Beddoes, makes use of the following words: "I think my experience in the observance of diseases, authorizes me to conclude, that *few persons* afflicted with scrophulous affections of the superficial lymphatic glands of the large joints or bones (when scrophula attacks these parts early in life) *are liable to consumption of the Lungs.*— This may be contrary to your experience; but I have often been disappointed with finding the Lungs *sound*, when scrophula had ravaged the whole set of superficial lymphatic glands, and and all the spongy bones which are remote from the heart." * It is extraordinary, that notwithstanding the testimony of Mr. Carlisle, so clear an observer as Doctor Beddoes, should persist in the received opinion, that Tubercular Phthisis is but a modification of Scrophula.

The Hypothesis itself, in my opinion, falls to the ground, as one which has nothing to support it, when it is considered that no Anatomist has as yet discovered Lymphatic Glands in the Lungs, and yet Tubercles are supposed to be Lymphatic Glands, indurated and enlarged by Scrophula. The favourers of the Hypothesis, however, are not to be confounded by this fact, but infer that

* Beddoes on Pulmonary Consumptions, p. 71.

they are present; because no part of the body where absorption goes forward, can be without lymphatic vessels and glands. No one will deny that lymphatic vessels must be present, where absorption takes place, but the presence of glands does not seem to be equally necessary—besides, if every tubercle were a diseased gland, the number of these organs would be out of all proportion. I have examined many bodies of Persons who died with Tubercles in the Lungs, and they were so numerous, that the point of the finger would cover many. It is unnecessary to pursue the argument farther—I shall therefore in a brief manner proceed to examine the appearance and structure of Tubercles, the first step towards ascertaining a just opinion of their nature. Doctor Bailie describes Tubercles, as being "at first very small, not larger than the heads of very small pins, and in this case are frequently accumulated in small clusters. The smaller Tubercles of a cluster probably grow together, and form one larger tubercle. The most ordinary size of tubercles, is about the size of a garden pea, but they are subject in this respect to much variety. They adhere pretty closely to the substance of the lungs, have no peculiar covering or capsule, and *have little or no vascularity.* When cut in two, they are found to consist of a white *smooth substance*, having *great firmness*, and often contain in part a *thick*

*curdy* pus." * Doctor Stark's account of them is nearly similar, and corresponds precisely with my own observation, in the numerous opportunities I had of examining them in the dissecting-room of the Hospital of the House of Industry. In his description he states, that they are of a *whitish* colour, and of a *consistence* approaching nearly to *the hardness of cartilage;* when cut through, the surface appears smooth shining and uniform. No vesicles, cells or *vessels are to be seen in them*, even when examined *with a microscope, after injecting the pulmonary artery and vein.*" It is impossible not to be struck, from these descriptions, with the exact similarity that subsists between the structure of Tubercle and Carcinoma: both are composed of a whitish shining hard substance resembling cartilage, and are alike impervious to injection, therefore do not contain blood-vessels within their substance; both are attended with flying or *lancinating* pains—both discharge a thick slimy matter—both are most prevalent in the same description of persons, and both take place at the same period of life. But my own experience affords me the most convincing demonstration of the fact, as I found *Tubercles in the Lungs of every Patient that died of Carcinoma*, whose body I had an opportunity of examining.

* Bailie's Morbid Anatomy, p. 67.

Others, I trust, will let no opportunity escape of ascertaining a circumstance which may lead to a just knowledge of a disease that annually destroys so large a portion of the inhabitants of the British Islands, the mortality arising from Consumption alone, being computed at one fourth of the entire number of deaths.

In case xv. a man who recovered of a Cancer of the lip under the use of the arseniate of Iron, afterwards died of fever. He was dissected and in his stomach was found a cancerous tumour the size of a hazel nut, and his lungs were full of Tubercles and Vomicæ. He had been an elderly man of a pale sallow countenance, and emaciated frame, and was addicted to drinking ardent spirits the greater part of his life; but notwithstanding the diseased state of his lungs, and that he was subject to cough, he never complained to me of inconvenience from that cause.

In case xxxi. that of an old man of a similar constitution, who had Cancer of the leg, we find the entire lungs in a state of disease full of Tubercles and Vomicæ, but the latter much more numerous than in the former case. He had every symptom previous to his death of a diseased state of those organs. Both of these subjects were examined in the dissecting room of the Hospital of the House of Industry.

But the appearances in Mary Kelly's case (XL.) are greatly deserving of attention. She died in Saint George's Fever Hospital, and I was assisted in the examination by the Apothecary of that Institution. The lungs were found full of Tubercles, many of the size of large garden beans, but there were no Vomicæ.—On comparing a section of any of these Tubercles with a section of the Carcinomatous substance, neither Mr. Sims nor I could perceive the slightest difference between them. But that which is most interesting for the Physician to know, is, that notwithstanding the number and large size of the Tubercles, this woman never complained of cough, and on inquiry among her friends I did not discover that she had been subject to one.

The only indicative symptom, I noticed in her life time, were severe pains and stitches, and they were particularly frequent, while her Breast was in a state of healing after operation.

These were the only cases of persons who died with Cancer, whose lungs I examined, and in every one of them Tubercles were formed.—But I am convinced from the symptoms that occur in the latter stages of Cancer, that in almost every instance the lungs on examination would be found tuberculated. A remarkable case is related by Mr. Home, of a Lady " who had a cancerous tumour removed from her Breast, but

at the time had an uncommon affection of her breathing;—the disease did not return in her Breast, but the affection in her breathing became worse, and she died in a month after the operation.——Upon examining the parts after death, every part connected with the operation was found in a healthy state; no glands being found diseased; but the lungs on both sides, were every where diseased appearing like a solid mass, adhering universally to the ribs. Upon cutting into them, there was a number of tumours of different sizes, many of them not larger than peas, perfectly distinct from the surrounding parts; others much larger.—The tumours which were the size of a small egg, or even somewhat smaller, when cut open, had the appearance of being made of a number of parts, in substance *between Jelly and Cartilage.** It is natural to inquire if Mr. Home had been ignorant of the existence of the cancerous tumour in the Breast, would he not have termed these bodies Tubercles, which he suppposes were caused by the Cancer in the Breast extending itself to the lungs—in fact this case, with those I have stated proves that the Tubercular and Carcinomatous substances are identically the same.

It has not yet been satisfactorily explained from what reason the inhabitants of the British

* Home on Cancer, p. 76.

Islands, are so much more subject to Pulmonary consumption than those of any other part of the Globe. It cannot depend upon climate, soil or insulated situation; for those who live in countries of the same latitude, or whose soil is similar, or who inhabit other islands are not in the same degree its victims.

It is a disease which necessarily must be the cause of mortality in every country, but "in the British Islands," says Doctor Beddoes it "is incontestibly great. To consumption nearly one fourth of the deaths they bear is referred alone by the bills of mortality." So that it well deserves the title Morbus Anglicus, with which it has been designated by foreigners.

If this greater prevalence of Phthisis cannot be referred to climate, soil or situation, it must consequently be owing to so some peculiarity in custom or habit. But as there is a great variety in the mode of living among the various classes of the inhabitants, a general induction cannot be made by considering the mass of population collectively; but a just conclusion may be formed by considering each class separately, with respect to occupation, habits and diet—whether they chiefly subsist on animal or vegetable food, or spend the greater part of their time within or without doors. Fortunately for me Doctor Beddoes has at great pains, in his valuable work

upon consumption, collected a variety of facts to elucidate the different degrees with which consumption prevails in different classes: I shall take the liberty of arguing upon the facts he has collected—tho' in another point of view, and deduce from them conclusions somewhat different from his.

By these facts it appears, that butchers, fish-wives, sailors, watermen, stable-boys, grooms, and small farmers, are the classes chiefly exempt from Phthisis, and that others are exempt in proportion as they approach those classes in their mode of living.——Doctor Beddoes concludes that as the above description of persons live chiefly upon animal food, which they consume largely on account of their laborious occupations, that to this diet and their mode of life, which conjointly render their bodies robust, is owing their exemption from Phthisis; for in making his general inference, he seems to withdraw the opinion he had before suggested, that this exemption is owing to their exposure to exhalations which preserve their lungs in a healthy state; and indeed it does not appear to me on what grounds such a conclusion could ever have been formed.

It appears on the other hand, from the facts collected by Doctor Beddoes, that artisans, whose occupations and habits are opposite to those men-

tioned, stand in an opposite relation to consumption. Thus taylors, glovers, shoemakers, weavers, spinners, cloth and carpet manufacturers, are the classes most liable to the disease.

Now, tho' these last mentioned classes are the reverse of the others in their employments which are sedentary, effeminate, and require comparatively little or no muscular exertion, yet it must be allowed generally speaking, that they can as well afford to live upon animal food as their more vigorous neighbours, and there is no reason to suppose that they relinquish an enjoyment that lies within their reach. The fact I believe is, that many of them eat more meat than is good for them, considering their sedentary habits, while the peasantry of Ireland few of whom enjoy even occasionally animal food, are a hardy robust people, and so little subject to Phthisis, that they may well be ranked among the classes exempt from that disease. It is among the artisans alone of large towns, among women and those who live much within doors that we are to look for its victims, and probably no city affords a larger proportion than Dublin, particularly its liberties, which are chiefly inhabited by weavers and cloth manufacturers. From these facts, it is manifest that deficiency of animal diet in no way predisposes to the disease; we must consequently look to some other more

efficient cause in order to account for its prevalence among those who lead a sedentary life.

In considering the exciting causes of Phthisis Pulmonalis, the state of the air, in which those classes of persons live, who are most prone to the disorder, ought particularly to engage our attention; and if on comparing it with that of the classes who are exempt from the disease, any difference is found we shall naturally be led to form conclusions on the subject that cannot be unimportant.

Thus it appears, that all the classes who are exempt from Phthisis agree in one point, though much they may differ in others: they may be said to *live in the open air*, which they therefore inhale in an uncontaminated state; while the very reverse is the case with respect to those who are most prone to the disease; they from the nature of their employments are necessarily shut up in apartments, in general crowded, and at the same time badly ventilated, and continually breath an atmosphere, loaded with carbonic acid gas, and impure vapours, and whose requisite proportion of Oxygen Gas is considerably diminished. This explanation however, only tends to account for the greater prevalence of Phthisis among certain classes, and does not in the least explain why the inhabitants of these islands should be more prone to consumption thanthose of other

civilized nations, who have also their artisans subject to the same degree of privation from fresh air and exercise as our own. This circumstance however may be owing to so simple a cause, that from its very obviousness it has been overlooked.

In Holland, Germany, Russia, and other Northern climates, the temperature of which, like our own, requires the aid of artificial heat, the inhabitants have their apartments warmed by the combustion of fuel (in general composed of wood) not in open hearths, as we have, but in stoves—by which means the gasses and soot formed during combustion, are all completely carried out of their dwellings thro' the flues, and do not vitiate the air in their apartments. It is thus preserved pure and respirable, and to this end the current of fresh air necessary to keep up the combustion conduces not a little: But in some parts of the Continent, so well aware are they of the ill effects of combustion on the air of their apartments, that they are warmed by stoves which have ash-pits without; so that the combustion is preserved by air which has no connection with that of their apartments. In warm climates, particularly the West-Indies, where Cancer is rare, and Phthisis Pulmonalis is seldom seen, and when it is, only occurs in young persons, whom it attacks with Hœmoptoe, and other symptoms of the Florid Consumption,

they have not in any season a fire-place in their apartments; and that used for culinary purposes is always in a building at a distance from the dwelling-house, and even there only wood is consumed.

But with us coal, which during combustion emits a variety of noxious gasses is almost exclusively the fuel made use of, and it is burned in such an unguarded manner, that the air in our habitations must be constantly vitiated with a great portion of the vapours and gasses produced during its combustion *. These must have a

* According to Klaproth, one hundred parts of Coal contain of

| | | |
|---|---|---|
| *Volatile matter* | 62 | 25 |
| Charcoal | 20 | 25 |
| Lime | 2 | 0 |
| Sulphate of Lime | 2 | 5 |
| Oxide of Iron | 1 | 0 |
| Alumina | 0 | 5 |
| Sand | 11 | 5 |
| | 100 | 0 |

Thompson's Chem. v. iv. p. 240.

"We may see clearly," says Fourcroy, "what passes in the action of Fire upon Coal, by heating this bitumen in close vessels, and in the apparatus for distillation. Thus we obtain from it an ammoniacal water, Concrete Carbonate of Ammonia, and an oil which grows darker coloured and heavier in proportion as the distillation advances; at the

mischievous effect on the general system, and more particularly injure the pulmonary organs of persons exposed to their influence.

We have already remarked a striking example of the effect of the gasses emitted in a more concentrated form in a coal-mine near Valenciennes. The persons subjected to their influence became of a dead white, their blood lost its colour, and their muscles their irritability. The same effect probably takes place, tho' in a less degree in those constantly exposed to the vapours arising from coal-fires. And indeed we see a very evident proof of this in the pale visages and inert frames of the various tribes of manufacturers. Some allowance undoubtedly must be made for a deficiency of Oxygen Gas in the air they are accustomed to breath, and their consuming less of that principle, on account of their small degree of muscular exertion, to which the frequency of respiration bears an exact proportion. But we have elsewhere seen that the colour of the blood, and the irritability of the muscular fibre seem to depend upon a just proportion of the Oxide of Iron in the system; and that the Iron is rendered inert, and of a dark

same time a *great quantity* of *inflammable elastic fluid* passes over, which is considered as an oil in a state of vapour, but which is *Hydrogen Gas* mixed *with Azotic Gas*, *Carbon* in solution, and *Carbonic Acid Gas.*"

Fourcroy, v. VIII. p. 328.

colour, if not combined with a sufficiency of Oxygen. It therefore follows, that this must be the case if Oxygen should not be supplied in due proportion; or if there should be an excess of the inflammable principles, Azote, Hydrogen, Carbon, &c. which from a stronger affinity would deprive the metal of its Oxygen.

This explanation, I conceive, is sufficient to account for the loss of colour and muscular energy in the coal-miners of Valenciennes, and also in those who are perpetually confined in ill ventilated apartments employed in sedentary occupations, and exposed to vapours of ignited coal, of which sixty-two parts in one hundred, are the bases of inflammable elastic gasses. But I would particularly recall the attention to the fact, that a similar state of body is predisposed to Cancer; and, as it appears that the Carcinomatous and Tubercular substances are alike in their structure and nature, it follows that the same state of body will also be predisposed to the formation of Tubercles.—Besides this *general* predisposition to the formation of a gelatinous body, resembling softened Cartilage, *the constant local application* of an inflammable substance, is calculated to produce a similar *local* effect, whatever be the part on which it operates. A curious instance of this fact is afforded in the remarkable disease peculiar to chimney sweepers. Soot, which is nothing more than undecomposed coal

sublimed by heat *, constantly applied to the scrotum, the rugæ of which retain it in constant apposition, at length produces a *true Cancer.* Thus this unfortunate class of persons may be said to exhibit an unequivocal experiment, by which is detected an exciting cause of Cancer; and if particles of Coal suspended in the air, are inhaled in inspiration, and retained by Mucus in the minute cells of the Lungs, precisely the same effect may be expected to follow.

* In a valuable paper inserted in the transactions of the Royal Society for 1805, by Mr. Lane, are the following experiments and observations, which are closely connected with our present subject: Mr. Lane informs us he procured a precipitate of Iron, sold at Apothecaries Hall, by the name of Ferrum Præcipitatum. "This Precipitate," he continues, "is similar to the sediment of Chalybeate Waters, and affords no magnetic particles, nor when exposed to a continued clear red heat, does it suffer any alteration beyond the acquirement of a darker colour; but if any *smoke* or *flame* has access to it, then *magnetic particles are evident.*" In these experiments every inflammable matter he used, particularly Coal, Camphor, Hydrogen, Alcohol, Charcoal, and Sulphur, also rendered the Oxides of Iron magnetic.—It is probable at the temperature of the human body the same effects may be produced, but in a more gradual manner; hence the constant application of the inflammable substance of Coal to any part, may have an effect upon the Iron of the blood within its influence, and thus render it inert, and unfit for the uses it was destined to fulfil.

Tubercles in the Lungs bear a resemblance to Cancer of the Face, in their size, appearance, structure, and the mode in which they produce ulceration and suppuration of the surrounding parts,* and we need not be surprized at this great similarity, when we consider the large quantity of blood with which both these parts are supplied, which, although it does not prevent, retards the growth, and tends to the expulsion of the foreign substance.

It naturally occurs that the remedy for Cancer would be the remedy for Tubercles; but it is difficult to ascertain their existence in the early stages of the disease. Cough and expectoration of a peculiar matter, are in general the first symptoms that create an alarm; but it is evident that the disease must be far advanced, when these indications occur, as ulceration must have previously taken place. For we have seen in case XL. that the Lungs were full of Tubercles, but without vomicæ; and yet their presence had not been indicated by those symptoms.

The Patient, however, had been affected with flying pains in the chest, aud she felt a difficulty of breathing amounting almost to suffocation, whenever she attempted to ascend a flight of

* See page 108.

stairs quickly. She was pale in her complexion, and languid in her habits.—The two latter symptoms as strongly indicated Cancer as Tubercles; but the two former could be attributed only to the Tubercles; and may hereafter be admitted as symptoms of their presence in perhaps the earliest stages of the disorder.

If I could suppose that this Book would fall into the hands of persons not belonging to the Profession, I would earnestly recommend them to seek for medical advice on being thus affected, without delaying until the more unequivocal symptoms take place, of cough, expectoration, and wasting of the body, when the disease is but too likely to baffle the powers of medicine, and becomes altogether hopeless as soon as Hectic Fever appears, the sure forerunner of death.

If the presence of Tubercles be established, the indications of cure are,

1. To restore to the system the due quantity of Oxide of Iron, the principle which nature furnishes against the production of diseases of this class.—This may be accomplished by giving such articles of diet as contain Iron in the greatest proportion, and also by the exhibition of such salts of that metal as the circumstances of the Patient's case may indicate. By these means

the Tubercles may be absorbed, if not arrived at too great an extent, or it may be at least expected that their progress will be retarded, and the distress they occasion alleviated.

We have already seen * that animal matter contains a very considerable quantity of Iron; vegetables also contain a portion of this principle; but on account of the stimulating quality of the former, as nutriment, there is sufficient reason to suppose that the quantity of Oxide of Iron in animal far exceeds that in vegetable nutriment, and that, for the same reason, the flesh of old animals contains more than that of young. This contains still more than fish, which, on account of its small quantity of red blood, can only possess a very minute portion of that metal; while shell fish, for the same reason, probably does not contain any;—however, it is much to be regretted, that among the incalculable benefits which modern Chemistry has bestowed upon medicine an analysis of the different articles of diet has not been made, by which the Physician, on comparing their principles, might *with certainty* recommend that most appropriate to the state of his Patient. But without the assistance of an analysis of those substances, there are satisfactory grounds to conclude, that the flesh of full grown animals, which contains the greatest pro-

* See p. 405.

portion of the Ferruginous Oxide, is the nutriment best adapted for the Tubercular Consumptive Patient; while fish, shell-fish, and the flesh of young animals is more suitable in the Florid Consumption, if animal diet is at all admissible in that disease.

I have already stated, that it appears by the result of Dr. Beddoes' inquiries concerning the persons who are most exempt from Consumption, that they live largely upon animal food; to which cirsumstance, for the above reasons, may be in part ascribed their exemption from that malady: undoubtedly, a great deal may be attributed to this cause; but a much more satisfactory explanation is already pointed out in the circumstance of their living without doors little exposed to the baneful Gasses extricated during the combustion of coal.

2. As the Iron in the Blood cannot perform the offices for which it appears designed without being supplied by a sufficiency of Oxygen, it is consequently of the highest importance that the Tubercular Patient should dwell where the atmosphere is least exhausted or adulterated, and contains its full proportion of Oxygen Gas. He should reside at a distance from cities, in which the vital part of the air is constantly kept at a reduced state, not only by the quantity of fuel consumed there, but by the num-

bers of living Beings whose respiration converts it so largely into Carbonic Acid Gas, and chuse his abode in an elevated situation, surrounded by plantations, whose foliage tends so much to purify the atmosphere.

Thus the diet and the very air that is breathed by persons labouring under Tubercular and Florid Consumption ought to be as opposite to each other as the causes to which both species of Phthisis are owing; and if it should be thought necessary to call in the aid of factitious Gasses of an inflammable nature, for the benefit of the Florid Patient, Oxygen Gas might be equally useful for the Tubercular; but far greater benefit would be derived by constantly separating this Gas in the Patient's apartment, than by causing him to breathe it pure at intervals, tho' ever so frequent.

It is unfortunate for the Patient afflicted with Tubercles, that these bodies, when numerous, prevent the access of Oxygen to the Blood, and thus tend to their own multiplication; hence the frequent inclination to a livid or purple colour in the features, and probably the rapid emaciation which always takes place, notwithstanding his appetite enables him to make use of his usual quantity of nourishment. For we have already seen how important a part Oxygen acts in effecting the change of animal fluids into solids; and

if this principle be deficient, the necessary deposition of solid matter to supply the place of the exhausted materials removed by the absorbents cannot be effected by the secerning arteries.

3. But air and diet, however important, are but auxiliaries in the mode of treating this species of Phthisis. Tubercles, like Carcinoma, are best opposed in their progress by the internal exhibition of the Salts of Iron; and, if thus assailed in their commencement, may be radically and effectually subdued. But if the disease is in its advanced stage, when the Lungs are probably choaked up with Tubercles, palliation or retardment can only be expected.

It is unnecessary to recapitulate the different preparations of Iron, or their mode of exhibition. If the principle upon which I recommend their use is just, the doses in which they may be given will be found on reference to the numerous cases of Cancer in which they were administered. But in those predisposed to the disease, the use of Chalybeate Mineral Waters cannot be too strongly insisted upon; or even when the disease is fully formed, they must prove powerful auxiliaries.

Tho' I have been led by the analogy I found between this complaint and Cancer to discover

the utility of applying the same remedy in both, it is very well known that the different preparations of Iron have at different times been extolled by Practitioners for their efficacy in consumption; but not having ascertained that there were two opposite species of this disease, the medicine in one case beneficial was destructive in the next, and naturally, though unjustly, fell into disrepute.

A quack remedy called Griffith's medicine, whose chief ingredient is Iron, obtained great celebrity in consumptive complaints, but is as often reprobated for want of discriminating where it may be useful and where injurious. *

A friend of mine, whose humanity is the guide of his scientific pursuits informs me that the poor in the neighbourhood of Parsonstown, afflicted with consumption are in the habit of frequenting smith's forges, for the purpose of drinking the forge water, and that it is in considerable repute among them as a remedy for that complaint.—On Lady Ormond's estate near Castle-Comer, is a powerful Chalybeate

* The ingredients of this medicine, according to the Medical Observer, consist of

| | | |
|---|---|---|
| Myrrh ..... | 1 | Scruple. |
| Prepared Kali..... | 15 | Grains. |
| Sulphate of Iron.... | 7 | Grains. |
| Cinnamon Water.... | 1½ | Ounce. |

Spa that ranks high in popular opinion for the cure of consumption,* but it was no small perplexity to the neighbourhood to observe its different effects on two Patients, who were supposed to be ill of the same complaint.

Mr. ——— derived the greatest benefit under the use of the waters, and in the course of a year perfectly recovered. His wife afterwards became consumptive, and naturally resorted to the means which restored her husband; but persisting as long as she was able in drinking the waters, she grew daily worse, and found too late she had mistaken the remedy. On inquiring into the constitution of thePatients and the progress of the disorder, I learned that the husband was past the middle age, inert, sallow and phlegmatic, while the wife was young, sanguine and florid. The disease of the former was as slow as in the latter it was rapid, and there is no difficulty in unriddling the different effects of the water when we thus ascertain that the one recovered of the Tubercular while the other *is* dying of the Florid consumption.

Under my own care were at the same period two Patients labouring under these two opposite species of consumption; but the same medicine

* Mr. Higgins analized this Water, but I was not able to obtain the analysis from that Gentleman. Doctor Wade, however, saw it analized, and thinks it the most powerful Chalybeate in Ireland.

was not administered indiscriminately to both. The treatment was as different as the disorders, and the result in each successful and convincing. Mary Corcoran, forty years of age, sallow, emaciated and of little irritability of fibre, had many of the symptoms I have detailed, of Tubercles in the lungs. Her employment was of a sedentary nature, and confined her to a small unventilated apartment, the air of which was rendered still more impure by the vicinity of an extensive market. She had been afflicted upwards of a year with a teasing and almost constant cough, which only brought up a frothy matter from the lungs; she complained of flying pains and stitches in her chest, and could not at night lie on her left side. These symptoms were mild during Summer, but on the approach of Winter they became much worse, and her breathing considerably oppressed.

I put her on a course of the Ferruginous preparations, which during the first fortnight instead of alleviating seemed rather to exasperate her complaints, as her cough became much more frequent and distressing; but she persevered notwithstanding in the medicine, and the first symptom of amendment which took place under its use was an abatement in the pain of her left side, which enabled her to lie on it for several hours during the night without inconvenience.

On the 9th of January I took the following note of her case, " her cough, tho' frequent is not so distressing as she expectorates with more ease; the fixed as well as the flying pains in her chest are greatly alleviated, the latter are now but seldom felt; she can lie on either side equally well, and her countenance and general health are greatly improved.——On the 27th—her cough still continues, but she does not complain of any pain whatever in her chest. She continues to take her pills regularly, and notwithstanding the severity of the weather feels herself every day improving." From the remainder of the notes I learn that her cough became gradually milder, and from being pale and emaciated, she became robust and healthful; the medicine in time became unnecessary, and in the beginning of the following Summer, she ceased to call upon me, and I have not since heard from her.

The case of Florid Consumption was of Mary Boulger, a young woman about twenty years of age. The complaint commenced about four months previous to her application to me, with pain in her side, which, tho' not acute, prevented her lying on it at night, and a severe cough, with frequent spitting of blood, that had reduced her very much; notwithstanding which, her complexion was still high, her pulse between ninety and a hundred, full and hard. The pupils

of her eyes were remarkably large, her skin was fair, and her hair of a light colour.

By my direction she ceased to make use of gross animal food, and lived entirely upon milk and vegetables, the former in general reduced to whey. I ordered three grains of Camphor, united with one of Digitalis, twice a day, which was in a few days repeated three, and at length four times a day.

Soon after she commenced this plan, the spitting of blood ceased, and did not afterwards return; her pulse diminished in frequency and hardness, and the pain in her side gradually disappeared: she however for two months regularly took the medicine three times a day, and lived with strictness upon a milk and vegetable diet.——These two cases afford a sufficient example of the symptoms of the two species of consumption, and of the treatment, I conceive, adapted to each.

Two extensive institutions, the Hospital of the House of Industry and St. George's Dispensary, the extern daily Patients of which may be averaged at sixty, have afforded me ample opportunities of treating pulmonary consumptions on the principles I have laid down, and of establishing the fact, that there are two species of that disease directly the reverse of each other,

and requiring strictly opposite modes of treatment; and from having narrowly observed the Constitutions predisposed to both species, I am confirmed in my opinion, that those most prone to Scrophula are least disposed to Tubercular Phthisis; but I have reason to think, that Constitutions predisposed to Scrophula, and the Florid species of Phthisis Pulmonalis are *exactly similar*.

Many recovered who were affected with symptoms that left me no doubt that their lungs were affected with either one species or the other, and I must acknowledge as many derived no benefit from the medicine, but in these the disease had advanced to its latest stages.—The circumstance to which I would particularly call the attention, is that the treatment, by which one disorder of the Lungs is amended, only tends to aggravate the other.

Digitalis is a powerful remedy in the florid species on account of its sedative power on the solids, but I conceive that Camphor, Soda and Carbon, are still more powerful from their effects on the fluids, by reducing the Oxide of Iron in the blood, and rendering in consequence that fluid less stimulant. But these remedies, so far from dissipating Tubercles, encourage their Production and Increase, their proper antidote being an Oxide of Iron, which in the Florid

Consumption would excite a rapid and fatal termination. Some of these remedies, or preparations bearing an analogy to them, have long been used in consumption, but without any discrimination between the different species; consequently they are sometimes successful, but oftener the reverse.

Tho' the practice I recommend originated in theory, it is supported by the experience of three years, in which my opportunities of bringing it to the test, were not only considerable, but the result, in my mind at least, satisfactory and convincing.

In noticing the treatment of the different species of Phthisis Pulmonalis, I have only endeavoured to mark the outlines of the practice adapted to each; if I attempted more, it would swell this Chapter far beyond its just limits, and indeed it has already greatly exceeded those I at first intended; however, it may be necessary to mention, that I would by no means exclude the addition of some of the remedies in common use; for instance, in the Florid species of Phthisis, where fixed pain in any part of the chest, denotes inflammation or an internal Ulcer, the counter-stimulus of repeated blisters, or of an external issue, may be attended with indubitable benefit; and in Tubercular Consumption, when Vomicæ are formed, by which nature ma-

nifests an attempt to expel the Tubercles, the constant cough and irritation attending such a state, may be greatly alleviated by the use of Opium, and probably by mucilaginous substances; but of these Lichen Islandicus stands the foremost, and is in high estimation on the Continent in this disease, on account of its tonic bitter principle, added to its nutritive mucilaginous qualities. But I cannot resist the temptation of noticing here a curious account I happened to meet with, of its effects in causing a discharge of Hydatids from the Womb, as it seems to add some confirmation to my opinions respecting the nature of Tubercles.

The account was communicated by Doctor Sporing, professor of physic at Abo, to the Royal Academy of Sciences at Stockholm, who tells us, that a woman of East Bothania, in the forty-second year of her age, had been greatly reduced by Menorrhagia, accompanied "with swelling of the womb like that of a woman near her time. In her affliction," he continues, "she complied with the most disagreeable prescriptions, till, finding no further relief, she would be physicked no longer, resigning herself to God, either for life or death, and she was looked upon as a dead woman.

At a parish meeting on the 6th of April her husband, in discourse among the peasants, hap-

pened to commend Heath-grass, or *Muscus Islandicus*, as a most wholesome vegetable, of which he had heard wonders. On the Tuesday following a neighbour comes to him with a large bundle of this moss to know whether it was the right sort, and seeing it to be such, he immediately went in quest of some, to try its virtues on his tortured wife, and having made a kind of potage of it with half milk and water, he made the first trial on himself, and finding no harm by it, gave it to his wife, about whose recovery he was tenderly concerned. She soon perceived the tumour below her breast to subside, and she breathed freely; the palpitation immediately abated, and the very next day she was able to sit up the whole day. But on the night of the 30th of April the swelling near her breast returned with a most raging tooth-ach. Being advised to use the moss as tea, after drinking three or four large cup-fulls, and very strong, she found an immediate ease throughout her whole body, and fell into a sound sleep till noon, when she voided a great deal of coagulated blood, not unlike small Vesicles or the larger Spawn of Fishes, but they were only Hydatides, some being sent me as a proof of the excellent virtue of this moss, which, possibly, is not much known; this evacuation continued upon her from noon till seven or eight in the evening, and amounted to something above two quarts.*"

* See Med. Chir. and Anat. Cases, translated from the Swedish language, p. 20.

II. Such are the opinions I have formed respecting Phthisis Pulmonalis, and such the treatment I would found upon them; but it is time to conclude the subject, and take a hasty view of some other morbid states which seem to be connected, with a deficiency of the metallic Oxide in the system.

I would, without hesitation, name that state of body morbid, which among the inhabitants of the crowded, and ill-ventilated parts of large cities, is marked by a pale, sallow, and frequently bloated countenance, attended with languor and inactivity of body, and a tendency to anasarca, when the Patient complains and cannot describe his ailments. This state of body, so general among the manufacturing Poor, who are chained down by their employment to close and crowded dwellings, cannot be attributed to a want of wholesome and nourishing diet. This they are much better able to afford than the Field-Labourer, who at least in this country, with the privation of every comfort, and on a meagre diet, consisting of little more than vegetable aliment, enjoys the recompense of sound uninterrupted health.

III. The connection which exists between a pallid countenance, languor and inirritability of body, and a deficiency of the metallic oxide of the blood; and the activity of the metal upon the

living fibre, in proportion to the quantity of Oxygen with which it is combined, are positions that I persuade myself are sufficiently established; it will therefore be granted, that a morbid state may be produced by an atmosphere which is impure and deficient in Oxygen Gas; a state which, when we consider the importance of the Oxide of Iron to the system, may be looked upon as the first step to a variety of diseases, both local and general. Among the most obvious of these is, Obstruction in various organs, the ramifications of whose vessels are extremely minute, and which is caused by the deficiency of their natural and accustomed stimulus; hence in the habitual drunkard scirrhous enlargements of the Liver frequently attended by general dropsy; both diseases arising from the same source, and the latter, not (as has been generally thought,) the consequence of the former.

Persons addicted to the practice of drinking spirituous liquors immoderately, are most frequently carried off by these two diseases. It is unnecessary to remind the Chemical reader, that Alcohol is a combination of Carbon with Hydrogen, two inflammable bodies which when supplied in excess to the system, must constantly keep the Iron of the blood at a low state of oxidation. The immediate effects of Alcohol when taken into the stomach, before it is received into the vessels, is to create excessive action; this

must consequently be owing to its influence upon the nerves, therefore to us inexplicable; but when its component principles enter the circulation, the disoxigenation of the Iron of the blood must be so rapid as to occasion, in some measure, the paleness, languor and depression that succeed; but independent of this explanation, debility always follows over-excitement, and its frequent recurrence must predispose the system to the diseases, finally produced by the Chemical action of the principles of Alcohol upon the Blood. These are chiefly scirrhous enlargements of the Liver, Spleen and Mesenteric Glands, followed by general dropsy.

I have frequently observed, and others must have noticed the same fact, that the most trifling cut or wound in the habitual drunkard, will not heal by the first intention, and that inflammation sometimes takes place, engaging the entire limb, and threatening gangrene, before suppuration and granulations can be produced. This may be owing to deficiency of the Metallic Oxide, which gives the blood its plastic power; hence in such a case, a wound cannot heal, till the entire powers of the part are brought into operation, and an encreased action of the vessels to a considerable extent is induced. When wounds occur in persons of this description, the experienced Surgeon knows the necessity of supporting the constitution, in order to bring the wound into a

state likely to heal. He never thinks of reducing the inflammation, by lowering the system, but promotes the Patient's strength, as a means much more capable of inducing a favourable termination. The exhibition of Iron in such cases would probably be a powerful auxiliary, not only as a corroborant, but because a supply of that principle is necessary for the purpose of carrying on the plastic process.

Where there is a tendency to induration of the Liver, this metal internally exhibited, may by its stimulating properties prevent the disease; but when a scirrhous enlargement has actually taken place with or without dropsy, it will not be expected that a cure can be effected by any attempt to restore the component parts of the fluids to a just equilibrium, for a morbid accumulation in the structure of a Viscus, can only be removed by the absorbents. Mercury, therefore, which excites the action of these vessels with more certainty than any medicine with which we are acquainted, is the first and most efficient remedy in such cases; but it ought to be followed by the exhibition of Iron for a considerable period, which will prevent a recurrence of the disease, by maintaining a healthy and vigorous action of the absorbent and secerning vessels.

IV. The origin of Chlorosis we are wholly unacquainted with, but the symptoms clearly point out that there is a deficiency of the Ferruginous Oxide of the system. To what cause this deficiency is owing, or why it should be connected with a particular period of life, is an enigma in our present state of knowledge inexplicable. But whatever be the cause the fact is strongly demonstrated by the unremitting languor and listlessness, fatigue on the slightest exertion, great debility and palpitations, accompanied by a remarkable paleness of the face, which as the disease advances assumes a yellowish hue, a small quick pulse, with hurried and difficult respiration and œdematous swellings of the feet. On dissection of those who die of the disease, the ovaria are in general found in a scirrhous or dropsical state, and very frequently the Liver, Spleen and Mesenteric Glands are found indurated and enlarged.

Doctor Hamilton of Edinburgh, conceives that the leading symptoms of the disease may be readily explained by a reference to the state of the Primæ Viæ, as costiveness always precedes and accompanies the other symptoms; but if I may be allowed to differ from so experienced and discriminating a judge, I would attribute this symptom as well as the Amenorrhœa which attends the disorder to one general cause, which induces torpor and inactivity of the entire system.

The remedy universally found most beneficial has been Ferruginous Medicines and Mineral Waters, but probably the Phosphates of Iron combined with Aloes would be found more effectual than any remedy hitherto in use, and seems to be a combination admirably adapted for the symptoms of this disorder. This exposition of the immediate cause of Chlorosis acquires confirmation from the benefit derived from the medicine with which it has been so successfully treated, and there can be no doubt but that a simple deficiency of the Ferruginous Oxide creates very great derangement in the system, of which there are many degrees and shades of complaint, some of them with names and many without them, from the pallid Languor occasioned by the impure air of cities to the maximum of this chain of maladies, a disorder I have already more than once alluded to, the Anæmià of coal mines.

V. There is an account of this remarkable disease in the London and Edinburgh Medical Journals, as copied from the *Journal de Medicine*,* which, though this is the proper place is too long to transcribe, but there are some passages which will give us a clear idea of its nature.——There were several galleries in the mine, but the disease was only prevalent in one which did not easily admit of a renewal of the air. Its temperature was 64 Fahr: and it

* Tom. IX. p. 3. An. XIII.

exhaled an odour of sulphurated Hydrogen Gas, in which of course respiration was difficult. The persons exposed to this atmosphere were affected " with pains in the intestines and stomach, difficulty in respiration, palpitations, loss of strength, and black and green stools. This state continued ten or twelve days or more; then the abdominal pains ceased; the pulse remained feeble, contracted and weak; *the skin lost its colour* and assumed a yellow tinge; walking was difficult and accompanied by extreme fatigue; frequent palpitations caused an extremely painful state of anxiety; the face was swollen, and there were frequent and even habitual sweats. This state continued for many months, even more than a year, and was always attended by wasting and emaciation." Four men affected with this uncommon disease, were sent to Paris and admitted into the Hospital of the School of Medicine, of whose state M. Halle gives the following description: " When they arrived, they were of a wan yellow colour, not like that of men affected by the jaundice, but like white wax which had been long kept. They were œdematous; the face and also the superior extremities were swollen in a particular manner; the loss of colour was general over the surface of the body; and not only was the skin wan and yellowish, but the conjunctiva, the inside of the eye-lids, of the lips and mouth, and the tongue were also deprived of their natural colour. No

ramification of capillary vessels appeared on any of these, and in general no vein was visible on the arm, bend of the fore-arm, and back of the hand, either by its colour or convexity. This loss of colour was attended with so great languor, that they could not use the slightest exercise without palpitations and a sense of suffocation. They could not even mount one pair of stairs without being obliged to stop, and to sit down at the end of a few steps." Mercurial Frictions were used with these Patients, under which treatment one of them died, and on dissection the following curious appearances were observed. " The Heart was of a very ordinary size, and its flesh as *pale* as that of *muscles which have been washed and macerated.*——Not a drop *of red blood* escaped from any of its cavities; but in the left ventricle a coagulum, as *pale* as the flesh of the Heart itsself was observed, which contained *no perceptible portion of colouring matter.*"——" In the three cavities, all the vessels both arteries and veins were destitute of *coloured blood*, and contained only a small quantity of a serous liquid;" a circumstance which others as well as M. Halle had before observed in dissecting Persons, who had died of the same extraordinary complaint.

M. Halle struck by the phenomenon of a want of red blood, and the generally sound state of all the organs, thought that the use of *Chalybeates* would perhaps have been

a better treatment than that of simple bitters, anti-scorbutics and especially mercurials. With this new view *Levigated Iron filings* were accordingly prescribed in large doses for the remaining three Patients, and we are informed that under this treatment "at the end of eight days symptoms of *a very happy change* became evident. It was first indicated by the obvious swellings of the veins, then by the coloured traces of the vessels, which became visible on the skin thro' the fore part of the wrist; in fine by the Patients being able to mount the stair-case without being obliged to stop." "They shewed us every day," he continues, "new vessels which were not discernible the preceding evening; in fine the Patients under this treatment resumed their natural appearance and strength, and were soon discharged the Hospital well."

VI. But in all these shades and degrees of disorder, the effects we have been describing tend more or less to reduce the human frame to a fit soil, or nidus for the production and nourishment of Animal Fungi, and Beings of independent existence. Tubercles, Cancers and Hydatids universally fixed like plants to the spot that gave them birth, and Tæniæ, Ascarides and Lumbrici, which with a superior degree of organization, have like animals a power, however confined, of locomotion. It is unnecessary here to repeat the means of destroying them. It has

been more than sufficiently demonstrated that Ferruginous Oxides are the only certain remedy, for this extensive and various class of complaints. Of worms Tænià has ever been the most obstinate to subdue, and has been long known to resist every other medicine; but its efficacy would be probably found equally great in the Guinea Worm, which infests the fleshy parts of the body, and is the great torment of Tropical climates; and let me again impress upon the Reader, that the reputation of Ferruginous Preparations in all vermicular cases was the curious but fortunate circumstance, that led me to the discovery of their virtues in a disease much more malignant and fatal.

I cannot conclude this Chapter without adverting to the great and important assistance that may be derived from a knowledge of Chemistry, in developing many of the phenomena natural and accidental of the human frame.

Notwithstanding the disrepute into which the doctrines of Paracelsus and his followers have deservedly fallen, I do not hesitate to pronounce, that at the eminence this science has attained, and the perfection it is every day approaching, the Chemical Action of the various component Parts upon each other, modified by the Living Principle, will afford a nearer insight into the operations of Nature in the Animal Œconomy,

than any other means within our attainment. We have already seen the number of uses, occurrences, and derangements that spring from a principle that has been almost overlooked, and there may be other incidents, a closer investigation will discover to depend upon it. The studious or sedentary man, whose pulse and respiration are seldom quickened by exercise, grows pale, languid, listless, and depressed—the first indication of disorders that are to ensue. This state, it is needless to mention, is induced by a want of the necessary oxidation of the Iron in the blood, by breathing such a sufficiency of wholesome air, as gives to the active and laborious the ruddy glow of health. The same fact informs us why the complexion in protracted Typhus Fever is pale and sallow, while on the contrary it is of its brightest red in inflammatory fevers. In the former the respiration is slow, in the latter rapid and full; in one oxidation is deficient, in the other excessive.

Many other occurrences may hereafter be assigned to the principle to which we have already ascribed so much; but there are many principles in the body equally deserving our attention, and there is not one that does not claim it in some degree.

Disorders the least *understood*, and consequently the *most formidable* and *fatal*, will be found to

arise from the excess or deficiency of these remote constituent principles. The Field is new and unbeaten, but it will in time be explored, and medicine in consequence attain the perfection of which it is susceptible.

## CHAPTER IX.

*AN ATTEMPT TO ANSWER THE QUERIES OF THE MEDICAL COMMITTEE OF THE SOCIETY FOR INVESTIGATING THE NATURE AND CURE OF CANCER.*

IT was my wish to comprehend within the preceding Chapters a consideration of every circumstance by which I could illustrate the nature, or promote the cure of Cancer; but on comparing them with the very accurate and scientific Queries of the Medical Committee, I find that I have fallen very far short of my design. But I shall endeavour in this Chapter to supply my deficiencies by attempting to answer these several Queries in the order of their publication, and which, by the way, forms an excellent arrangement for an Essay on this disease.

I shall not waste time, at the conclusion of this tedious Essay, in excusing the seeming arrogance of the attempt, nor in developing, with cautious circumlocution, my ideas, however novel. But I shall give them severally, to the best of my abilities, a plain categorical answer; and, to avoid unnecessary repetition, I shall refer in the margin to such parts of my work as support by fact or argument the positions I lay down.

I shall closely follow the path marked out by the comments annexed to the Queries: it is unnecessary to transcribe them here; but as the Introduction published by the Committee unfolds their design, and marks the state of medical information on the subject they propose, I shall insert it as it stands, and to each of the Queries shall subjoin the most satisfactory answer I can furnish, avoiding those ambiguous words and phrases they deprecate with so much propriety as conveying no essential or practical knowledge.

"Every person (the Committee observes) must be sensible of the various difficulties attending the establishment of a new institution, and of the much greater and more numerous difficulties which beset our first steps in the acquisition of knowledge on a subject of which, it may be said, we are even at this time *totally ig-*

*norant.* But, in order to form a basis of inquiry, in which the nature and cure of Cancer, it is presumed, may be pursued with all the advantages of reason and experience, the Medical Committee very early drew out and distributed the following Queries, for the consideration not only of the corresponding members, but of all medical men, to whom opportunities of answering them might, by study or by accident, occur. A satisfactory answer *to any one* of these Queries would, in itself, be of great importance, and might probably lead to an explanation of others. It is therefore earnestly requested, if any new observation or discovery respecting Cancer should be made, that it may be communicated to the Secretary of this Institution; and, if any progress in the investigation of the nature and cure of Cancer be made by or imparted to them, it will, without delay, be laid before the public by the Medical Committee. It may be necessary to observe, that the promoters of this institution have never entertained the idea of creating the jealousy, or of interfering with the interests, of those who are engaged in institutions of a similar kind; their intention being solely that of co-operating in the laudable endeavour to lessen the mass of human misery, by calling for the assistance of others, and by exerting themselves to obtain a remedy for a most painful and dreadful disease, *against which*

*all the medicines and methods of treatment hitherto proposed and tried have been unavailing.*"

QUERY 1st.—*What are the diagnostic signs of Cancer?*

Cancer is a gristly substance, approaching the nature both of Jelly and Cartilage,[a] its structure generally abounding in Cysts that contain a thin serous fluid:[b] it commences in a point,[c] and gradually increases to a hard unequal tumour, diverging into roots,[d] and accompanied by lancinating pains.[e] It is endued with an independent vitality, or an existence separate from the part wherein it subsists.[f] When by any cause it or any portion of it is deprived of life, it gives the stimulus of an extraneous substance, and excites ulceration, which thus, and thus only, is produced.[g] This event is preceded by a dark redness of the integuments, and after it takes place, the edges of the Ulcer become elevated and retorted, and its sides are of a gristly hardness,[h] except when a Vascular Fungus occurs.[i]

[a] 259 to 260.
[b] 246.—280 to 288.
[c] 249.—278 to 280.
[d] 243 to 246.—301 to 305.
[e] 313 to 317.
[f] 236 to 242. Chapter IV. *passim.*
[g] 275 to 277.
[h] See all the cases of Ulcerated Cancer.
[i] 273 to 274. 387. Case XXXVII.

There are occasionally different discharges;—one thin, acrid, and fœtid, flows from the surface of the Ulcer;[k] the other, white tenacious and slimy, adheres to the cancerous substance, and seems to be that substance itself, in a state of slough.[l] There is no use in long definitions, if a short one will answer the purpose; I shall therefore define Carcinoma an ANIMAL FUNGUS.

QUERY 2d.—*Does any alteration in the structure of a part take place preceding that more obvious change which is called Cancer; and if there be an alteration, what is its nature?*

An alteration arising from diminished vitality,[m] or accidental injury, always precedes Cancer.[n] These destroy the organized structure, and induce the slow decomposition of the part; during which process, its component particles, *before* they are actually reduced to their original principles, Carbon, Hydrogen, Azote, and Oxygen, not being carried off by the absorbents as they are disengaged, enter into a new form of Being in the Animal Fungus Carcinoma.[o] Glandular parts have a tendency to de-

[k] Case XXXVI. XXXVII. and other cases of Open Cancer.

[l] See all the cases of Open Cancer, particularly those of the Face.

[m] 262 to 269.

[n] 269 to 273.

[o] 253 to 256. 264 to 266.

composition;[p] as also parts become useless appendages to the system,[q] and are instances of a local disposition to this disease; while its only constitutional cause is a deficiency of the Oxide of Iron in the Blood.[r]

QUERY 3d.—*Is Cancer always an original and primary disease; or, may other diseases degenerate into Cancer?*

It is an original and primary disease, and no other disease can degenerate into it;[s] tho' other diseases may assist its production, by causing the slow decomposition of a part.[t]

QUERY 4th.—*Are there any proofs of Cancer being an hereditary disease?*

There is no proof that Cancer is an hereditary disease; but rather the reverse: and it would be going very far to suppose that even a predisposition to its production, arising from a deficiency of Iron in the system, can be hereditary.[v]

[p] 264.
[q] 266.
[r] 379 to 392.
[s] Chap. IV. *passim.*
[t] 268.
[v] Chapters III. and IV. *passim.*

QUERY 5th.—*Are there any proofs of Cancer being a contagious disease?*

Cancer is not a contagious disease, and cannot be communicated from one person to another. Were it contagious, the fact must have been established even in the earliest ages; for, if it possessed a virus capable of imparting the disease, it would have been almost as generally communicated by the touch as Lues Venerea. But some modern writers have by experiment removed every doubt on this subject: Dr. Nesbit frequently infected his fingers by handling cancerous sores. Suppuration ensued in one instance, and in another swelling of the axillary glands likewise occurred; but Cancer was in no instance produced, and the same consequences only succeeded as would follow the absorption of any acrimonious matter. And this received the fullest confirmation from the courage of Mr. Nooth, who frequently conveyed a minute portion of the cancerous fluid into an incision in his arm, but without any other effect than a trifling inflammation, which soon subsided.[w]

Neither can Cancer *infect* different parts of the same person.[x] It is true, it may arise in more parts than one;[y] but this is caused by a

[w] 282. 288.
[x] 292 to 300.
[y] Cases IV. XV.

general deficiency of the Oxide of Iron, or a diminution of vitality in the several parts affected.[z] But it propagates itself by extending its roots in all directions, where there is least resistance;[a] or by disseminating pea-like substances connected by filaments beneath the skin.[b] It may also be increased to infinitude, by cutting away the original Carcinoma, and leaving its numerous roots severally to emulate its inveteracy and magnitude.[c]

QUERY 6th.—*Is there any well-marked relation between Cancer and other diseases? If there be, what are those diseases to which it bears the nearest resemblance in its origin, progress, and termination?*

There is a well-marked relation between Cancer and Tubercles in the Lungs, their solid structure being exactly alike;[d]—both impervious to injection,[e] both arising in similar constitutions,[f] both exciting ulceration on the loss of vitality,[g]

[z] 379 to 393.—262 to 273.
[a] 301 to 305.
[b] 306 to 310.
[c] 305. Cases XL. XLI. XLIV. XLV.
[d] 260. 424 to 429. Cases XV. XXXI. XL.
[e] 260. 426.
[f] 437.
[g] 275. 439.

and both yielding to the same remedies.[h] Hydatids resemble both in most of these particulars, but bear a stronger analogy to the fluid than the solid parts of Cancer.[i] Like this disease, they frequently arise from injury[j]—exhibit the same contractile power[k]—betray the same symptoms, so as that they are often mistaken for each other,[l] and are deprived of their vitality by the same preparations.[m] Tænia closely, and the other intestinal worms in a remote degree, bear a relation to Carcinoma.[n]—They are equally parasites[o]—their production probably similar[p]—their destruction effected by the same means,[q] and with respect to Tænia, its gradual increase and partial death mark the strongest analogy to Cancer.[r]

Other distempers possess a distant relation to this disease;[s] but there is not that well-marked resemblance that would entitle them to be men-

[h] 439 to 448.—445 to 448.
[i] 284 to 292.
[j] 285. 311.
[k] 280 to 283.
[l] 103. 285.
[m] 384 to 385. Case XXX.
[n] 256.
[o] 255 to 257.
[p] 255 to 257. 310. 462.
[q] 383.
[r] 258. 274. 309.
[s] Chapter VIII. *passim.*

tioned here. Scrophula and Syphilis do not bear it the slightest affinity; and there is no connection between it and schirrus,[t] except that the latter is a fit nidus to give it birth.

The *Animal Fungus*, whatever be its magnitude, its situation, its appearance, or name—whether it is called Carcinoma or Lupus, or Noli me tangere, it is still the self-same disease;[v*] and even the Fungus Hœmatodes[w] is but a vascular production thrown out by the muscular parts attacked by Cancer in the efforts of nature for the preservation of the part. And this modification of the disorder can only be radically removed by the same method of treatment that cures Cancers of the "Tongue" or "Uterus,"

[t] 267.
[v] 105 to 109.
[w] 387.—Case XLVI.

* As a further proof of this fact, and at the same time to correct an error into which I had unwarily fallen from outward appearances, I take this opportunity of stating, that in Case XXIII. Ulceration again took place, and became more extensive than before, both cheeks being engaged in one continued Ulcer. The Oxy-phosphate was daily applied, which caused an extensive slough to form, of precisely the same appearance and consistence that I have so often observed in Cancer of the Breast, and other parts; this slough has now almost separated, the sore discharges healthy matter, and is contracting daily in size; and I have little doubt that a very short period will establish his perfect recovery.

and all other parts, between which there is no essential difference.[x]

QUERY 7th.—*May Cancer be regarded at any period, or under any circumstances, merely as a local disease? Or, does the existence of Cancer in one part afford a presumption that there is a tendency to a similar morbid alteration in other parts of the animal system?*

Cancer is at every period, and under every circumstance, merely a local disease;[y] yet its existence in *one* part, if it arises spontaneously, and not from violence, affords a presumption that there is a tendency to a similar morbid alteration in *other* parts of the system, thro' a deficiency of the ferruginous Oxide[z]. Where this is the case, operation must always be attended with ill success; for, altho' every root should be removed, the tendency would still remain, and new Cancers arise wherever there was a nidus for their production, assailing those parts the next in degree deficient in the metallic Oxide, or subject to run into decomposition, as the neighbouring Breast, the Uterus, the under Lip, &c. &c.[a]

When the disease is occasioned by accident in a person furnished with a due proportion of the

[x] 260.
[y] 292. to 305.
[z] 379 to 386.
[a] 262. to 264.

Oxide of Iron, extirpation is much more likely to succeed: for if the roots are totally removed, there is no danger of a relapse; but the Surgeon who depends upon this mode of cure should separate not only the portion immediately affected, but so much of the neighbouring parts as it is probable the roots have entered; if it is possible for the knife to follow them. And where the part affected is among those predisposed to Cancer, he should on that account alone be careful to remove it totally, however small the cancerous substance, or he has not sufficiently guarded against a relapse. Operations are in a great degree rendered unnecessary, by the preparations of Iron, and Caustics may be abandoned altogether.

QUERY 8th.—*Has climate or local situation any influence in rendering the human constitution more or less liable to Cancer, under any form or in any part?*

Climate or local situation can have very little direct influence in rendering the constitution more or less liable to Cancer; for on the principles I have presumed to lay down, if the Iron of the system be less oxidated from the rarified atmosphere of Tropical countries, it may derive a sufficiency of Oxygen from the use of fruits and other ascescent diet: and, on the other hand, if the Iron be more oxidated from the dense atmos-

phere of the Arctic regions, it is deprived of a portion of its Oxygen by the constant use of such articles of diet as are most alkalescent or inflammable, as the flesh of whale, tallow and ardent spirits. But in temperate climates the air is more rarified in Summer, and condensed in Winter, while these effects are counterbalanced by ascescent diet during the former, and alkalescent during the latter. But climate and local situation may have an indirect influence in consequence of the air being more or less loaded with the vapours of ignited coal, and particles of this substance unconsumed, which must tend to disoxigenate the Iron in the system, and create a disposition in some degree to this disease, but still more to Tubercular Consumption,[b] as the Lungs will be more readily affected than other parts by atmospheric impurities. But the effect of the constant contact of soot is well illustrated in the Chimney Sweeper's Cancer[c]. This unfortunate class, is the only one I can single from society, as more subject than others to this disease;[d] but although I am convinced that persons are more or less liable to a Carcinomatous tendency in proportion as the Iron of their system is more or less liable to be retained at a low degree of Oxigenation, I have no satisfac-

[b] 429 to 440.
[c] 437.
[d] 437.—Case XXXV.

tory proofs how "employments in metals and manufactures, in mines and collieries, the army or the navy, the married and the single," are affected in this respect. But the same degree of oxigenation cannot take place in the sedentary as in the active, and I have sufficient evidence to be satisfied, that women are more subject to the disease than men, and this may arise from the greater size of those organs in the female sex, which in time become useless, and liable to decomposition.

But if women, whether married or single, are more liable to have the Uterus or Breasts affected—those who had children, or those who had not—those who have suckled, or those who have not—remains still to be discovered;—but probably the enquiry is no longer of importance, if the nature and cause of Cancer are sufficiently ascertained.

QUERY 9th.—*Is there any particular temperament of body more liable to be affected with Cancer than others? If there be, what is the nature of that temperament?*

That particular temperament, which is more liable than others to be affected by Cancer, is the Leuco-Phlegmatic, characterized by a pale and bloated countenance, and immoveable sluggishness of habit; this temperament, as well as its kindred

disease, arises in a great measure from the deficiency of Iron in the system. [e]

QUERY 10th.—*Are brute creatures subject to any disease resembling Cancer in the human body?*

Brutes are undoubtedly subject to a disease resembling Cancer; but whether involving all its symptoms, is a question to be resolved by time and attentive observation. I have myself removed from one of the paps of a Pointer Bitch belonging to friend, a tumour, which I have little doubt was a true occult Cancer; its structure was in every respect similar, but somewhat harder, and approaching more to the nature of Cartilage. I am told these creatures are very subject to this disease, of which they die in great agony. Books of Farriery do not notice any similar distemper in Horses, and I have not found on inquiry that it has yet been known to affect them.—I am equally ignorant whether it has been observed in other quadrupeds, but it is probably less prevalent among brutes than mankind, whose artificial habits, intemperance and excesses, expose their constitutions to numberless derangements and disorders, that never interfere with the more regular and temperate tenor of the brute creation.

[e] 217.—462. Cases XLII. XLIII.

QUERY 11th.—*Is there any period of life absolutely exempt from the attack of this disease?*

There is perhaps no period of life exempt from this disease—in early years it generally attacks the face;[f] for those parts on which it fastens in more advanced life are not yet unfolded.[g] I have seen instances of this disorder in Children nine or ten years old, but never earlier. Age is much more subject to its ravages than youth,[h] for then every part is less pervaded by blood-vessels, and more liable to decomposition. But there is a particular period when it occurs in women much more frequently than earlier or later in life. This is shortly after the cessation of the Menses,[i] and may be owing to the tendency of an organ to run into new and deranged actions when its customary functions cease.

QUERY 12th.—*Are the Lymphatic Glands ever affected primarily in this disease?*

I have never seen an instance of Lymphatic Glands primarily affected, but no doubt they are liable to be so in common with other parts of the body. The Secerning Glands as those of the

[f] 110 to 112.
[g] 110.
[h] 263.
[i] 263.—266.

Semen, Milk, Saliva, Mucus and Tears, are its more favourite seats, and from three cases of Cancer of the Eye that came under my observation, in which the disease had commenced in the edge of the Upper Eye-lid, I may add that the Meibomian Glands which are seated there, and secrete a sebacious matter, are no less predisposed to its attacks; [k] but the Lymphatic Glands, tho' not primarily, are often secondarily affected by the increase of the cancerous roots, which meet them in the progress of their growth, and render them immoveable; [l] but it is necessary to repeat, that Cancer is not a disease peculiar to the glands, but that the tendency of those organs to decomposition, renders them a fit soil for its production and increase. [m]

QUERY 13th.—*Is Cancer under any circumstances susceptible of a natural cure?*

Cancer, under some circumstances, may be susceptible of a natural cure, and there are four cases on record that leave us little doubt on the subject. Three of these were Cancers of the Breast, and one of the Testicle; [n] and I am inclined to add another to the number, a Cancer of the Nose, which I myself saw some years

[k] Case II. XLIV.
[l] 300.
[m] 264.
[n] 387 to 389.

after the recovery of the Patient.° With respect to two of the five, there are no data on which to form a conjecture of the cause of cure. Two of the Patients were ill of other disorders, whose virus might have an effect on the cancerous substance, which was also subjected in both these cases to such influence as could be exerted by the Iron contained in the blood effused over them by frequent Hæmorrhage. And in the fifth, the disease took place before the age of puberty, and subsided after that change had been fully established, without any evident corresponding cause. But we see the same effects take place in persons who, during childhood, were infested by worms, the constitution after the age of puberty shaking them off without the aid of medicine; some change inimical to the existence of Parasites being evidently induced at that period, and which probably consists in the gradual accumulation of Iron in the system, for the due performance of the functions during the vigour of manhood.

THUS have the principles I offer enabled me to give a simple, and, I hope, satisfactory answer to these comprehensive and ingenious Queries, that could only have flowed from persons of great experience, learning and sagacity.

° 390.

They knew well the difficulty of the attempt, when they declared, " that a satisfactory answer to any *one* of these Queries, would in itself be of great importance." * And the confidence with which I regard the opinions I have laid before the Public, is greatly strengthened by finding that they, and the practice grounded on them, furnish an answer not to one but in some degree to all. Yet fortified as I am in my *opinions*, I consider them of little consequence in comparison of the evidence I have adduced in support of the TREATMENT I recommend in this disease. Time and increasing knowledge may prove the former erroneous, but the latter, tho' it may be improved, can never be controverted. While the cases I have narrated remain on record, it can no longer be said, that this is " a subject of which we are totally ignorant," † or doubted whether " a true genuine Cancer was ever cured." ‡

The Committee lament " that from the time of Galen to the present, there seems to have been little or no difference between the medicines given and the applications used for the cure or relief of Cancer." § It is therefore no wonder it should have remained incurable and unreliev-

* See Queries and Comments. Edinburgh Med. Journal, v. II. p. 382.

† Id. 382.

‡ Id. 383.

§ Id. 386.

ed. While we reflect on the subject, we entertain in spite of ourselves a narrow and humiliating idea of the human Intellect. But the heart was more to blame than the understanding—effectual remedies were often discovered, but from motives of interest never divulged. Let it not be supposed that I lay claim to any merit either for my discovery or its disclosure. I have not found my interest injured by the latter, and with respect to the former, it was rather the gift of a happy and *almost* accidental thought than the purchase of profound study and laborious research. Though so little improvement was made in so many centuries what progress may we not expect from the united efforts of the Faculty assisted by the modern lights of science in the new path that now opens itself before us. Much remains to be done, but greater consequences " must now be the object of our exertions than to extinguish the disposition to Cancer or suppress it in an early stage." * This, and more than this has been already accomplished; all that remains is to subdue it in its very advanced state, but it would be as rational to seek a cure for old age as an effectual remedy for this or any other fatal complaint in its latest stages.

In future that dreadful operation the excision of the Female Breast may be in a great measure,

* Id. 384.

if not altogether dispensed with, and it is no small advantage that Surgeons will have fewer opportunities of earning the stigma cast on them by the Committee, and which is too frequently deserved, " that many Breasts not cancerous have been extirpated by a painful operation, often through the want of some criterion of Cancer, and sometimes it is feared, from motives of self-interest, or a cupidity to acquire undeserved reputation." *

Besides the encouragement my opinions receive with respect to the *nature* of Cancer, these queries relieve me from an uneasiness I felt in resorting to so remote an analogy as the diseases of plants for an explanation of *its production*. But the Committee themselves make use of vegetable phenomena in elucidation of their positions,† and indeed the subject is of such a nature as not only to excuse but demand the illustration. It has however been hinted to me by a Medical Friend that I have been guilty of a more serious transgression, and trespassed upon the province of the Physician in entering into an inquiry of the nature of Consumption. But candour will allow its close connection with my subject, and that in treating of diseases *allied* to Cancer ‡ there would have

* Id. 386.

† Id. 387. 388.

‡ See Query 6th.

been an unpardonable chasm if I had not considered Tubercles and other disorders arising from a deficiency of the Ferruginous Oxide of the system—a step which naturally led to those depending on its excess. But I am in no wise uneasy on this head: the investigation required a familiar acquaintance with the natural and morbid structure of the Body, and in similar researches, Observation and Reasoning must go hand and hand.—Without the one we should remain for ever where we are for want of a Guide, and without the other our very Guide would lead us astray. Directed by both, the immortal Harvey made his stupendous discovery, when the strongest efforts of his powerful mind would merely have bewildered him if he had not been assisted by the most accurate knowledge of anatomy. Other Physicians here and abroad have approached the shadow of his merit in proportion as they followed his steps; and if in the revolutions of science, this noble and most useful Profession now confines itself to the anatomical facts already ascertained, in expatiating on the origin, symptoms and treatment of diseases, subjects enough still remain to occupy reflection, and abundance of opportunity for the most important discoveries.

The advantages obtained in these commercial countries by a division of labour seem to extend themselves to the Learned Professions, and the

two great Bodies of the Faculty, in severally adopting those subjects of investigation that are suitable to their respective modes of research, will advance with increased and reciprocal improvement.

The Surgeon will not cast undeserved censure on the Physician who explains complicated and obscure constitutional effects arising from a local disease: nor will the Physician consider that his territory is invaded if a useful discovery is made within its precincts, that could only have been brought to light by a man whose life has been spent in a Dissecting Room.

THE END.

# PLAN

OF THE

# INSTITUTION

REFERRED TO IN PAGE 393.

THE advantages which must result from a CANCER HOSPITAL for the admission and relief of the poor, being considered by a few individuals who are anxious to establish so desirable an institution, they hope that others may be induced to co-operate in the undertaking, if a short detail of the benefits to be expected were laid before the public. The object in view is not only to investigate a disease so long supposed incurable, and to prove the virtue of every remedy hitherto in use, or that our encreasing knowledge shall deem worthy of a trial; but to relieve, or restore to health, patients whose cases are not incurable, and to offer an asylum to others, who are precluded by the hopeless and offensive nature of their disease, from admission into the other charitable institutions of this country. The following Plan is therefore offered as an Outline of the institution, to be modified and improved by the best suggestions that shall be offered;

## FUNDS.

I. That a subscription shall be immediately opened, and contributions continue to be received until the 1st day of January 1810, when the whole sum collected shall be laid out in the purchase of government stock, payable at the Bank of Ireland, or in such other way as to the Trustees, hereafter to be appointed, may seem most expedient; so as to form a permanent Fund for the support of the Hospital.

II. That after said 1st day of January 1810, every Subscription amounting to Ten Guineas, and upwards, as also the produce of Charity Sermons, &c. &c. shall be appropriated to encrease the permanent Stock; while all smaller Sums received, shall be applied in aid of the Interest of the Stock, to defray the current expences of the Hospital.

III. That Government shall be applied to for an annual aid of equal amount with the Interest of Stock and annual Subscriptions, which, if obtained, will probably together meet the expences of an Hospital containing twenty Beds.

IV. That whatever may be the Increase of Subscriptions, the Scale of the Foundation shall not be enlarged, till such an augmentation of Fund takes place, that the Interest shall be svfficient for its Support on the Scalc which was originally adopted. The Funds thus rendered permanent, the Foundation may be gradually enlarged to as great an extent as may be desirable.

## HOSPITAL AND PATIENTS.

V. That on purchasing the Stock on said 1st day of January 1810, or as soon after as possible, said Trustees, if they have not previously procured adequate Wards on the Foundation of some other Hospital, shall take a House in a healthy situation, and furnish it with twenty Beds; or, if the Funds are not sufficient, as many as may be expedient, together with Medicines and other Necessaries; one Room to be set apart as a Dispensary for external Patients, Apothecary's Shop, and Chemical Laboratory.

VI. That while there is a Vacancy, every Patient who labours under that kind of Cancer which is most rapid in its progress, and malignant in its nature, shall be admitted into the Hospital.

VII. That such Patients who reside in the vicinity of Dublin, and are affected with that kind of Cancer which is more slow in its progress, shall receive Advice at the Hospital, or be visited at their habitations, unless the increase of the disease renders it necessary to remove them to the Hospital.

VIII. That such Patients as shall come from any consiable distance, affected with the milder Description of the Disease, and whose circumstances do not enable them to procure lodgings, shall receive a small Allowance from the Funds of the Hospital for their support; or if there is a Vacancy, shall be admitted into the Hospital; but shall remove as soon as their Disease is sufficiently understood, to enable the Medical Attendants to advise the proper course to be pursued on their return home.

IX. That when any Governor forwards the Case of a Patient residing in the country, and unable to come to Dublin, to the Register of the Hospital, such Advice as may be necessary shall be given, and Medicine supplied at the expence of the Institution.

X. That in case hereafter an Enlargement of the Institution should take place, Patients whose Complaints bear a relation to, or may lead to a knowledge of Cancer, shall be admitted to the Benefits of the Institution.

## GOVERNORS AND OFFICERS.

XI. It is calculated that all the Expences of the Hospital will not amount to more than Twenty-five Pounds per annum for every Bed therein, and many wealthy Persons may be induced to contribute a Sum that will support one or more Beds; should this be the Case, any Person charging his Lands with an adequate annual Sum, or subscribing a Sum, the Interest of which would be adequate to the support of one or more Beds, will at all times be entitled to

send Patients into the Hospital, in proportion to the number of Beds supported by said Subscription, and in preference to those recommended by any other Class of Subscribers; this Privilege to descend to the Heir of said Subscriber, and become hereditary in his Family. Subscribers of Ten Guineas and upwards shall be Governors for life. Subscribers of Two Guineas shall be Governors for one year. Subscribers of One Guinea shall be also Governors for one year, but with the Power of recommending external Patients only; and the Physicians and Surgeons of the Hospital shall be also Governors.

XII. That the Governors shall elect the Trustees, Physicians, Surgeons, and other Officers of the Institution, by Ballot; that such Governors as reside at a distance from Dublin shall ballot by Letter directed to the Secretary of the Institution, (or the Person acting as Secretary till one shall be appointed by Ballot, who shall not open said Letter, (it bearing a sufficient mark to apprise him of its contents) but shall lodge it in the balloting Box until the opening of the Ballot.

XIII. That there shall be Quarterly Meetings of the Governors to audit Accounts, and regulate the Institution, Notice of which shall be given in the public Papers, affording time sufficient for Subscribers residing in the Country to communicate their Observations.

XIV. That an acting Committee of such Subscribers as reside in Dublin, shall be annually appointed to superintend the Business of the Hospital.

XV. That there shall be consulting Physicians, and consulting Surgeons, attending Surgeons, an Apothecary, who shall also be Register, appointed by ballot; and a House-keeper, or Head Nurse-tender, appointed by the Committee. The Apothecary

should have an Apartment in the Hospital, and a Salary; and it is absolutely necessary that he should be a good practical Chymist, in order to prepare Medicines for the use of the Institution on the most œconomical terms.

XVI. That with a view to the better Investigation of the Disease, a Correspondence shall be established with the Cancer Hospitals of London, Glasgow, &c. &c. The attending Surgeons shall keep a regular Account of all the Patients external and internal, in a Book provided for that purpose, in which is to be noticed the History and general Appearance of the Disease, the Mode of Treatment, and its Effects, and any Remarks which the Medical Attendants may be induced to make on the Case; by these means a correct Annual Report may be formed of the Relief afforded by the Institution, and the State and Progress of our Information with respect to the Nature and Treatment of Cancer: This Report may be printed for the Advantage of the Public, and with same design the Book of Cases should be open to the Inspection of every Inquirer.

SUBSCRIPTIONS WILL BE RECEIVED IN *DUBLIN* by the Hon. Lord Ffrench and Co. John C. Beresford, Esq. and Co. Right Hon. David Latouche and Co. Sir Andrew Ferguson, Bart. and Co. Messrs. Thomas and Jonathan Pim, *William-street*. Jonas Stott, *Dominick-street*. John Robinson, *Bride-street*. Messrs. Gilbert and Hodges, *Dame-street*.

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