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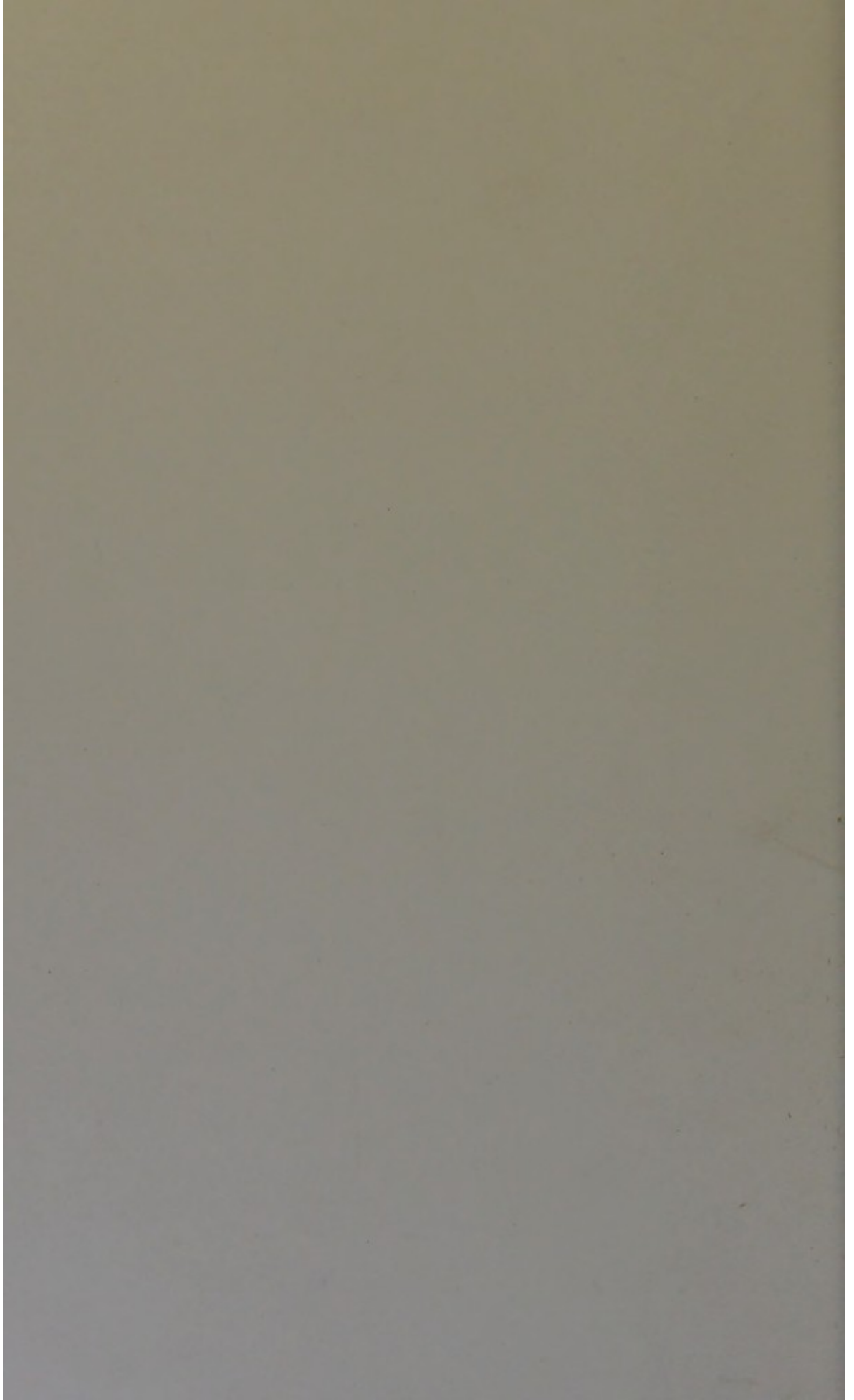
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OBSERVATIONS AND CASES,

ILLUSTRATIVE OF THE

EFFICACY OF OXYGEN OR VITAL AIR,

IN

THE CURE

OF

CANCEROUS AND OTHER GLANDULAR

ENLARGEMENTS.



BY

DANIEL HILL, M.D. SURGEON,

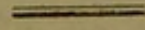
13, LONDON-STREET, FITZROY-SQUARE,

HONORARY MEMBER OF THE MEDICAL SOCIETY AT GUY'S HOSPITAL,

AND FELLOW OF THE HORTICULTURAL SOCIETY.



“For the life of the flesh is in the blood.” LEVITICUS xvii. 11.



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1824.

OBSERVATIONS AND CASES

OF THE

EFFECT OF QUININE ON FEVER
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ON CANCEROUS TUMORS

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INTRODUCTION.

IN a former work, I have stated a variety of cases, shewing the efficacy of Oxygen, or Vital Air, in the cure of many different diseases. The following contains several in which it has been successful in the cure of glandular cancerous tumour in the female breast. The principle in all of them is the same; that of giving increased life and action to the blood, and to all the parts and organs of the body, which are supported by it. It is a well known law of nature, that, by this influence of oxygen, or vital air, upon the blood, life is maintained, if not originally generated, in the fœtus, by the absorption of the maternal fluids* ; and

* Sir Everard Home on the Oviparous Shark. "It appears that oxygen is essentially necessary for the action of the vivifying principle in all the classes of animals: that it is not simply applied to the blood, but mixed with that fluid while circulating in the arteries; since, if this was not the case, there would be no means of aërating the fœtal blood, in the higher order of animals; and, as a further proof, (he adds,) that the air bladder of the shark is filled with pure oxygen gas."

that it is afterwards extended and perfected by it in the phænomenon of breathing. In the newborn infant, the atmospherical air, in which is contained a portion of oxygen, is known to produce, through the medium of the lungs, that more perfect state of animal existence, which is commonly called life ; imparting, at the same instant, a red colour to the blood, an increased action to all the fluids, and a power of motion in the solids.

It is by this active power in the air imbibed by the lungs, that, in a state of health, the temperature, or animal heat, in unison with the nervous power, is duly regulated, and all the secretions from the blood modified and performed throughout the complicated series of organs, whether glandular or membranous, which secrete the various fluids in the animal body. When this absorption of oxygen, or vital air (by whatever law of nature it proceeds) is freely performed, the health of the animal is supported, and all the secretions and excretions, as well as the processes of digestion, absorption, and assimilation, are of a quantity and quality that constitute what may be called the healthy standard ; and in this state, the powers of the mind and nerves are found in their greatest activity, and most perfect general accordance. The late Mr. John Hunter was of opinion, that the blood contains as much of the *materia diffusa vitæ* as the solids ; that it is the support of life in

every part of the body; and that no animal can be perfect without it: that the blood itself must be kept alive, and for this purpose must have motion, which motion is in a circle. "Here, then," he proceeds, "would appear to be three parts; body, blood, and motion: which latter preserves the living medium between the other two, or the life in both. These three make up a complete body, out of which arises a principle of self-motion, a motion totally spent upon the machine, and which may be said to take place in a circle, for the support of the whole. For the body dies without the support of the blood upon it; and the blood dies without the motion of the body upon it, perhaps in nearly equal times. *Life is, in some degree, in proportion to this motion, either stronger or weaker*; so, that the motion of the blood is, in some degree, a first moving power." Mere composition of matter, however, according to Mr. Hunter, does not give life: this author, at the same time, very justly acknowledging that life is a property we do not understand, and the leading steps towards which is all that we can see. Yet its effects, he thinks, may somewhat illustrate its nature. Thus, it is something which prevents that chemical decomposition of the blood to which dead matter, animal and vegetable, is so prone; that regulates the temperature of the bodies it inhabits, and is the cause of all the actions we observe. To

the operation of the *materia diffusa vitæ*, Mr. Hunter refers irritability, nervous action, and all the phænomena of life.

Without entering more at large into the theory of this most important subject, I shall refer the medical reader to Dr. Cooke's recent and able work on the Nervous System ; for the author, with equal impartiality, judgment, and learning, has there set forth the opinions of remote antiquity, and the multiplied labours of the moderns, on the subject of this inquiry ; and, at the same time, the whole shows the limited range of human investigation. Man must submit to acknowledge, that he can form no adequate conception of the wisdom and benevolence of the Deity. Life, as originated and supported, and the laws of what is called sentient or nervous power, form an impenetrable mystery ; and, indeed, when any part of the laws of the providence of God, is the subject of our contemplation, we seldom or ever get a glance at the manner in which their purposes are fulfilled. In the atmosphere that surrounds this globe, all animated nature is found to live. We breathe, in strictness, the breath of life. Life is supported by certain laws ; and when this, as a law of Providence is withdrawn, we die, and return again to dust.

Of the Cases just referred to, as stated in my former work, the four first in order are so pecu-

liarly adapted to introduce the reader to the great outlines of the doctrine and practice to be contended for in the present, that I deem it advisable to repeat them in this place, together with the observations with which I originally accompanied them.

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PRACTICAL OBSERVATIONS,

&c. &c.

- i. *The Case of Mrs. Forder's Daughter, late Rocking-Woman to Her Royal Highness the Princess Charlotte of Wales, at Carlton House.*

THIS child, from its birth, was delicate and weak. She was early placed out at nurse, under the care of a Mrs. Johnson, at Pimlico; and had good health until she was two months old, when a complaint in her bowels, to which children are liable, came on. A medical gentleman in the neighbourhood was called in, and the usual remedies given; but the complaint continued for near a fortnight, with little or no amendment. On some sudden increase of illness, another gentleman was consulted; who, seeing the disease rapidly advance, after a week's attendance, thought there was no hope of the child's recovery.

The anxious mother had the child brought to Carlton House; and, under the influence of *some high authority*, a medical gentleman of the household saw it: but the violence of the disease both

of the stomach and bowels, together with a constant vomiting, for near a week, had not only reduced its strength and pulse, but so directly precluded all useful nourishment or remedies, that it was supposed she must die in a few hours, or at least in the course of the night. Contrary to all expectation, however, some slight remains of life were visible the next morning.

The circumstances of the child's danger, and the entire relinquishment of all medical aid, being communicated to Mrs. Hayman, then residing at Carlton House, she, to quiet the feelings of the distressed mother, happily suggested to her a hope in the trial of vital air. This thought was brought to Mrs. Hayman's mind, from her having lately seen some curious cases and experiments at my house in Great Russel Street; whence she was induced to press the mother, to try its effects on the child. The nurse resisted this proposal, deeming it altogether impossible that any thing could save the child's life. The mother and nurse, however, accompanied by Mrs. Hayman, brought the child to Great Russel Street, and thus had ocular evidence, how far vital air possesses the power of restoring, as well as supporting life. The state of the child certainly was not mended by the motion of the carriage; for never did a child more resemble a corpse, from the deadly paleness of its countenance, its white lips, its sunk and closed eyes, and cold extremities, while the pulse was too feeble to

be distinguished. I conceived this was the ultimate stage of some mortal disease in the viscera, that had thus gradually destroyed the living principle; but no harm could arise from an experiment, as I had invented an apparatus of great accuracy, that could mechanically force into the lungs of children as much air, as might serve useful purposes. Immediately I prepared a portion containing two parts in twenty of the purest vital air. A proper quantity of this was forced into the lungs; and by the time the whole was expended, to the great surprise, I must confess, of the whole party, we saw the red colour restored to the child's lips, and to the extremities of the fingers and toes; suddenly too the eyes opened, affording pleasure which can be more readily felt than expressed. The pulse soon became active; warmth was diffused over the whole surface of the body; and in a few minutes the general action of the muscles began to show strength. After a second, but milder quantity was completely finished, the child was so much alive, as to smile at its mother's impassioned attention.

This singularly happy recovery demanded secondary considerations. The long continued vomiting, and the weak state of the bowels connected with it, required immediate attention. Accordingly I ordered the child small doses of rhubarb and magnesia, twice a day, in peppermint water; and twenty drops of a weak solution of vegetable al-

kali, each time it was fed by the spoon. The next morning, July the 20th, 1798, I found that the vomiting had never returned ; and that the child had slept well in the night, accompanied with a moderately soft skin. By a repetition of the above plan, as agreeing with the stomach, to promote *digestion*, with milder doses of *vital air* to support the *living principle*, administered by the *lungs*, I had the satisfaction to see the child daily advance in strength ; and after thirteen or fourteen farther applications of this new remedy, all local irritation of the stomach and bowels ceased ; so that in three weeks' time my attention was no longer necessary.

Observations on the preceding Case.

To every man of real science, liberality, and feeling, in the profession, this case will afford singular satisfaction. It opens a new scene to observation and reflection ; which, if pursued in all its extent, with moderate, candid, and judicious experiments, will bring us to a point, where medicine has long been deficient. In all stages of low nervous fever this remedy cannot fail of being infinitely useful. Having always endeavoured, in my professional experience, to extend my views from one given practical point to another next in analogy, I cannot forego mentioning here, that, from the very decisive and immediate recovery of this child, I was led to recollect, what my former

very extensive practice in midwifery had taught me, that many children, from various obvious causes, are still-born: and hence I naturally considered, how applicable and compendious this operation with vital air would be in such cases, and far more philosophical and rational than any other means heretofore attempted. Although many children, from mechanical injuries, cannot be supposed capable of being brought to life; yet, if five out of twenty can, by these means, be recovered, the discovery of vital air, thus applied, must prove highly gratifying to the feelings of mothers. I flatter myself, however, that a much greater number, when it is used by enlightened practitioners, will be restored. I will farther add, its use may be above all other means applicable in cases of people suffocated by deleterious vapours, in mines, in wells, or in the holds of ships, and in the recovery of drowned people.

In a practical point of view, this case, among many others, has been a guide to me in a great variety of instances. In the first place it proves, that very many children, and even grown people, as will be hereafter shown (see Case of Mrs. Holehouse, No. XI.*), are reduced to a dying state by diseased irritation only; and the number of both, that thus die, is incalculable. It is true, when the constitution is impaired by any considerable disease, or greatly altered structure, or organic defect

* In the second edition of my former work, p. 48.

in any of the principal viscera, perhaps it may be hereafter found, that the use of vital air is as ineffectual to produce a cure, as any other remedy. At all events, whoever is led to try the use of vital air in such diseases, should be well aware, how far he ought to go, and never to give it but with a very cautious hand. Indeed it should be used only as a mild alterative, combined with proper remedies to support the constitution, and palliate urgent symptoms. In such cases, I have very often omitted its use altogether, as its tendency to excite arterial action is very frequently considerable* ; for every scientific practitioner will be convinced, how ineffectual all human means must be, in extensive diseases of the lungs, the liver, and other viscera †, especially when combined with loss of substance from suppuration, or any material alteration of the natural structure. But when the constitution is sinking under simple irritation, debility, or in the last stage of low nervous fever; or when only common diseases of the extremities, as disorders of the joints, or scrofulous affections, are bringing on hectic, diarrhœa, and night sweats, in the greatest degree, I must here observe, with

* I was consulted in such a case by the late Honourable Mr. P. Curzon, and the Honourable Mr. Justice Buller, also a lady in consultation with Mr. Heaviside, and several ladies of rank at the west end of the town, where I avoided giving vital air for the above reasons.

† See Morgagni's Dissections, and Dr. Baillie's Morbid Anatomy.

great confidence, no human contrivance or discovery, ever equalled the power of vital air, to arrest the progress of the complaint, and, with a proper assistance from medicine, ultimately to restore the balance of life and health. Harvey says, page 57, by this treasure of life (meaning vital air imbibed into the lungs, to carry on the circulation) the parts are nourished, cherished with warmth, and made to grow, by the warmer perfect vaporous, spirituous, and (as he calls it) alimentative or living blood. That on the contrary, the blood in its passage through the body, (as in the state of this child) was chilled, coagulated, and as it were enfeebled, or made vapid, but when again enlivened by the natural potent and fervid heat as the treasure of life, it again became liquid, and fraught with spirits, &c. It is singular, that the above case should correspond, in so many essential points, with this truly great man's theory.

Since chemistry has unravelled this intricate subject, we know, that, by the union of the vital air with the blood in the lungs, a chemical decomposition takes place, and the latent heat of this air is transmitted in free and active caloric into the circulation, to support the due temperature of the body. But with this internal energy we may also calculate a great degree of recruit given to a weak habit, from the consequent vascular distension, and great support to the constitution, under the heavy load or barometrical pressure of our foggy, damp,

cold, heavy atmosphere. This will be particularly proved, by showing the use of vital air in the cure of weakly, ricketty, distorted, and scrofulous children.

ii. *Case of Hydrocephalus, in the Child of William Bennet, late of Berner's Mews, now No. 26, Devonshire-place Mews.*

This was a strong healthy child, till six months old, when he was seized with the small-pox in the natural way. The epileptic fit, common to young children previous to the eruptive fever, lasted three quarters of an hour, accompanied with strong convulsive struggles, and much seeming pain and uneasiness in the head. The morning after this fit, the small-pox appeared. With common nursing, during the several stages of the disease, the mother, to a certain degree, recovered the child; but as it often happens, that, without proper medical aid, the constitution is much impaired, so it was in this child; for, when the eruption was gone, the habit was very much exhausted, a great heaviness affected it, and there was a considerable inflammation in the white part of the eye, where a pustule had been.

The child was taken in this state to the Small-pox Hospital. Mr. Wachsel, the attendant apothecary, very judiciously ordered leeches to be applied to the temples, and several doses of physic,

which soon recovered the eye. Shortly afterwards, however, the child began to appear more dull and heavy; his head gradually enlarged; the sutures, which had been united except the two fontanels, were beginning to lose their bony union; and his lower extremities were so unable to support his body, that every attempt to move him gave him great pain.

He was now taken a second time to the hospital. Mr. W. immediately discovered that the enlargement of the head proceeded from water lodged within it, and apprised the child's mother of its fatal consequences. He notwithstanding advised more doses of physic, and some tonic remedy. The opening medicines gave him relief for a few days; but after that, symptoms of oppression returned with great violence, when the same remedies were repeated, but with no good effect. The head being now wonderfully increased in size in consequence of the weight and pressure of the water on the brain, the paralysis of all the extremities was complete.

The child was brought to me in May, 1796, then seventeen months old. On examining its head, I found the sagittal suture, commencing from the nasal process, or bones of the nose, and extending through the os frontis, or frontal bone, open to the full extent of half an inch. The other sutures, connecting the several bones of the head, were in the same proportion open, and

expanded from their natural bony union into a wide membranous one, under which water was felt to fluctuate very readily. On any kind of pressure, a convulsive motion of the body followed. His pulse was weak, and beat near a hundred in a minute; and all his lower extremities were perfectly flabby, and motionless.

This deplorable case, on being presented to my view, appeared to me one of the most incurable diseases, to which the human frame could be subject; and from its extent, far more threatening, than any I had ever met with during my practice. The child's total incapacity to inhale, even if vital air could act as a remedy, was the first difficulty I had to encounter. I therefore contrived to apply a tube to the body of my apparatus, closed the child's nostrils with my finger and thumb, made it cry, and, as often as it took a deep inspiration, forced the vital air from the apparatus into the lungs. This method succeeded completely; for warmth in the extremities was immediately felt, with a firmer pulse, and soft skin. The succeeding night, he slept with much more composure than he had done for many months; and his mother observed, that he made an unusual quantity of water.

From continuing the same dose of two parts of pure vital air to twenty of common air daily, in the course of a week he was evidently stronger, more lively, and his bowels, which from the ge-

neral paralytic torpor had been disposed to great costiveness, were become quite regular. As the action of the air by this time had produced a white tongue, I ordered a dose of rhubarb and sal polychrest, to clear the bowels gradually, by repeating it at short intervals. This soon cleared the tongue; the child ate a great deal heartier, and improved very much in appearance; the membranes soon became flaccid; and, as the water gradually lessened, new *ossific* matter gradually closed the suture in the frontal bone. In a month the whole of the sutures, except the two fontanel, were again united by a firm bony union. The head being reduced nearly to its natural size, on the cause of its enlargement being gradually removed, the palsy of the lower extremities recovered. Tonic remedies were now ordered, so that by the middle of October he could stand, and walk alone; and to so great a degree did the vital air renovate this poor little being, that he cut eight new teeth. This farther effort of nature appeared to be the only reason, why he did not recover the entire use of the lower extremities sooner. Since his recovery, this child has had his thigh fractured: but his constitution has surmounted this accident, though he is rendered somewhat lame, by the injured limb being shorter than the other.

Observations on the preceding Case.

Vital air thus mechanically applied with the happiest effects, in the last stage of this fatal disease, a disease too becoming more prevalent among children, with the phenomena of its thus imparting life to the blood, and exciting strong action in the heart and arteries, cannot fail to claim much attention, and give confidence in future practice. In the next place it promoted an increase of all the secretions, by the skin, kidneys, and bowels. To these effects succeeded the restoration of natural sleep; the subsequent absorption of the water covering the brain, the renovation of the ossific process in uniting the various sutures of the skull, and lastly, the removal of all the paralytic affections of the arms, legs, and bowels. These facts must give greater insight into the laws of the human economy, than could have been imagined.

Many of these curious circumstances may perhaps admit of some farther explanation on chemical principles. In the first place, that matter of nourishment, denominated hydrogen by modern chemists, which, after solution, or digestion in the stomach, is absorbed by the lacteals from the bowels, and conveyed by the thoracic duct to the left subclavian vein, and thus into the circulation, by the vena cava superior into the right auricle of the heart, exists in a weakly combined state in the blood, ready to unite with the vital air, which the lungs are constantly receiving in respiration. This

nourishing hydrogenous principle seemed in this child's habit to be in great excess*. The chemical union of the oxygen, or vital air, with this hydrogenous principle, and perhaps with other substances in the blood, as carbone, &c. immediately let loose their latent caloric, and imparted a higher degree of temperature to the cold, weak, exhausted body, alike subdued in strength by the defect of mental or nervous energy, and by the weakened action of the heart and arteries. While the oxygen, or the base of vital air, by its union with the hydrogen; imparted this beneficial warmth to the body, at the same time it formed water †. *This, passing off by the secretions of the kidneys, and skin, removed a cause of irritation, that existed in the constitution, and produced quiet sleep. Thus by a mild repetition of this air, keeping up the action of strength, and supplying the consolidating principle to the habit, the absorbent vessels gradually took up the superabundant fluid on the brain.* The arteries, too, were enabled to convey all the necessary materials for the secretion and deposition of *bony matter* ‡, until the head was

* This will be farther considered in cases of erysipelas, ulcers, mortifications, &c.

† Eighty-five parts oxygen, and fifteen hydrogen gas, divested of caloric, form water.

‡ This well known natural process of the combined action of the absorbents connected with deposition of bony matter, is well illustrated by the late ingenious Mr. John Hunter, and

reduced nearly to its natural state, and freedom of motion was restored to all the paralytic limbs.

Considering this case in a practical view, it instructs us to imitate the laws of nature, by a mild, regular, and due supply of this principle of strength; aiming, at the same time, to support an equable degree of temperature in the body, and to keep up, by proper medicines, the important functions of the stomach and bowels; so that all the combined powers of mind, air, food, and medicine, may be made to act upon the various organs of the body, for the support of life, and promotion of health, according to the general laws ordained by the Creator.

This curious subject cannot fail of interesting mankind, in proportion as the administration of vital air serves not only to restore and support life, but recover children from these two deplorable diseases already mentioned, as well as from many others, which have been laid before the public in my treatise on oxygen air. Since the above case two others of dropsy in the head have been cured.

iii. *Case of Scrofula in Sarah Parks, daughter of John Parks, formerly and then coachman to Mr. now Sir Thomas Plummer.*

“ This case affords a striking specimen of a new discovery in the cure of Scrofula and other diseases, will be exemplified largely in many other cases where vital air has been used as a remedy.

by the *office or functions of the lungs*, combined with common remedies.

“ This child, at eight months old, was afflicted on the left cheek with a small tumour, which gradually enlarged, until it broke into a troublesome sore. Soon after another tumour appeared on the right cheek ; this became no less distressing. No medical or surgical aid had any effect in either of these sores ; but, on the contrary, the disease extended to the bones of the upper jaw, and by degrees affected the bone of the lower jaw, in two distinct points ; and from the delicate state of the child’s habit, the ravages of the disease were at length extending to the bones of the ear, to the outer orbit of the right eye, and in all eight sores connected with an affection of some bone of the head. The misery of this child was not limited here, but the body, the arms, the legs, the thighs, and knee-joint, in all amounting to twenty-five sores, more or less, with those in the head deeply seated in the bones and lymphatics, rendered her an object of the greatest misery and horror, during a period of two years and a half. Various medical men of character saw the child, and directed such medicines and surgical treatment, as the nature of the case seemed to require, and amongst these the child for two seasons was placed in the hospital at Margate. In the first instance, after some months, she was improved in her health, but far from being cured ; in the second instance, she was no way better : and on her return, the child, now

above three years old, was placed under my care. The hectic arising from so many irritating and exhausting sores, rendered this particular case, such as is seldom to be found in any part of London. Having no other view but to try how far (in this miserable disease) the oxygen air might assist the debilitated constitution, I had recourse to the usual alterative mode, and by degrees the hectic pulse lessened; and by constant attention to the bowels, and ordering such tonic remedies as the state of the constitution seemed to require, in four months the sores gradually improved; she recovered her general health; the greater part of the sores healed; and except from the delay, which must be expected, to separate the diseased bones, she was in six months perfectly cured; a slight degree of fever and hectic irritation returned the following year, but in a few weeks, the same means of oxygen air and same remedies were used, she was again perfectly recovered, and has never had any return. She is now a strong healthy young woman, and has at different times been seen by several medical men and people of rank." Extract from Dr. Hill's Treatise, styled "Practical Observations on the Use of Oxygen, or Vital Air, in the Cure of Diseases," sold by Messrs. Rivington; and to be had at No. 13, London-street, Fitzroy-square*.

iv. *The Case of Mary Berridge.*

This young woman, at twenty-three years of

* The author's present residence.

age, came to consult me in the beginning of June, 1802, with one of the most malignant ulcers in her legs which offer to surgical observation.

This ulcer had commenced, as she told me, five years previously to my seeing her, and originated from a cold, and severe fever, which was succeeded by a hard tumor in the calf of the leg, accompanied with great inflammation, pain, and a considerable contraction of the tendons of the leg and foot. For the first fifteen weeks, she was confined to her bed: after suffering nearly a year and half, she was recommended by a Mr. Rudge, of Elstree, in Hertfordshire, to the Middlesex Hospital. She was attended there four months; during which time, she suffered another attack of fever and inflammation, more violent than at any former period, and was confined nearly the whole time to her bed. The ulcer became so seriously bad, that on a consultation, it was recommended to amputate the leg: this she would not consent to have performed. In September, 1799, she left the hospital as incurable. Country air was recommended, and she went into Bedfordshire; her health was here improved, and the leg less painful. After some time, she returned to Elstree, where she had the occasional advice of a surgeon of Stanmore. In the spring following, she was again in London for advice, and soon after was attacked with much fever, and a violent pain affected the side, *left breast, and arm.* For this fever, and painful symptoms, she was bled largely, and had such

remedies as soon lessened the violence of the fever and painful symptoms, except those in her breast, which were considerable when I first saw her : but she still continued to suffer with ulcers and contractions of her leg. She became an out-patient at St. George's Hospital, and, during her attendance, she was inoculated for the cow-pox. After continuing an out-patient for six months, and becoming too ill and lame to walk, she obtained a letter of admission into the hospital : during three months, no advance to cure being observed, she was again recommended to undergo amputation ; this, however, she again refused, and soon after left the hospital. On leaving the hospital, she placed herself under the care of a surgeon in Charter-house Square, and during four months' attendance, no improvement was observed ; at which time, this gentleman died : and, in succession, she was seen by several eminent surgeons in different parts of London, until the period she came under my care. At this time, a thick, dense, and perfectly black substance, surrounded the whole of the muscles of the leg, with intervening deep and painful ulcers, exuding a most offensive ichorous black discharge ; the whole of the leg was much contracted, and very hard from the foot to the knee, and *the breast was also very painful and hard*, and the general health, in every respect, in a most exhausted hectic state ; and she had little or no sleep, but what was obtained by means of

opiates. The natural state of her constitution was far from regular: from this malignant state of the sores, and the long continuance of the disease, with weakness and poverty combined, I had little expectation of a recovery. Under all these distressing circumstances, I had recourse to the usual alterative method of giving the oxygen air, and regularly observed the progress of its influence; and, in the course of a week, I found the pulse more natural, the hectic symptoms much lessened, the sleep refreshing, and all the painful sensations in the leg very much lessened. The fœtor of the sores and black discharge beginning to change to a more healthy pus; but the hard, black, and thick substance surrounding the leg still the same; and *the pain in the breast was lessened*. The general swellings in this and other parts were much softer; and it was her observation, that she passed a considerable quantity of water. In succession, almost daily improvement was observed in the constitution, with an increase of appetite; in three weeks, the actions of the living or vital principle, enabled the parts to throw off daily several large, dense, black sloughs from the old ulcers; fresh granulations immediately followed. At this time, I directed some bark, and gentle intervening remedies, to keep the bowels regular; and by these means, she was, in two months, completely cured, and in better health than she ever remembered, and *the breast reduced to its natural healthy state*.

ON CANCEROUS TUMOURS &c.

CASE I.

Bethia Treacher, aged twenty-three, having been afflicted with bad health for two years or more, and become, by degrees, very much reduced in her general strength, was, at the same time, suffering from a large schirrous breast, which gave her considerable pain. In this state, she was recommended to the care of the late ingenious surgeon, Sir Charles Blick, under whose directions, various remedies were successively resorted to, during a period of eighteen months, at the end of which, the symptoms having grown more urgent, and the schirrous tumour more enlarged and painful, Sir Charles recommended extirpation. A day was consequently fixed for the patient's entering St. Bartholomew's Hospital; and on the day following that, the operation was to be performed. An accidental interview taking place, in the mean time, between myself and Mr. Mathews, the magistrate (now resident at Chelsea,) that gentleman undertook to send the unhappy young woman to me, as a poor patient, in order that she might try the effect of oxygen air, as a means of restoring the general health, and, at the same time, the removing of the large schirrous breast.

Mr. Mathews's offer was readily embraced. The

emaciated state of the body, and general character of the hectic pulse, with great pain in the tumour, gave me little hopes of amendment; but I resolved to try what could be done, and accordingly administered, day by day, the oxygen gas as an alterative, with such occasional medicines, as the symptoms seemed to require. Under this treatment, the pulse gradually became more regular, the pain in the breast gradually lessened, the tumour softened, and the general health improved; and, in four months, the patient was so much better, and the tumour so much reduced, that it was no longer necessary for her to remain in town under my care. In this stage of the cure, I recommended country air, and some tonic medicines; and after a few months more, she became so well as to be free from all pain and inconvenience. In the November following, she was married to a Mr. Coltman.

In the spring of the next year, her health was again somewhat impaired; and, in these circumstances, the pain in her breast, in a slight degree, returned. On this occasion, I was again consulted, when I recommended a return to the use of oxygen gas, with some tonic medicines; which being persevered in for a few months, restored her general health, along with which the tumour entirely yielded, the breast became soft, and wore every appearance of health; and none of the former symptoms of cancer, at any subsequent time, returned.

CASE II.

— Godby, a young woman, resident in Norfolk Street, Middlesex Hospital, was, from early life, of a delicate, relaxed habit; had at no time been perfectly regular, and the discharges were always defective in quantity. Along with this peculiarity of habit, there was, at particular periods, a considerable flow of blood from a small aperture at the end of the middle finger. The discharge, though the puncture was so small as scarcely to be discernible by the naked eye, and certainly weakened her constitution, as it was accompanied by a considerable degree of pain in her left breast, where a hard tumour was soon formed, attended with a great sense of heat, and almost constant pain. The glands under the arm were soon affected, and this was followed by a swelling of the whole arm, extending particularly to the puncture in the middle finger, which was often painful to the touch. In the month of April, an eminent surgeon was consulted, by whom various medicines and applications were directed, until September following, without any improvement whatever.

At the period mentioned, my success in the preceding case occasioned me to be consulted by this new patient, with respect to whom I determined on trying the same means of cure. In the course of a few weeks, I found the pulse much firmer,

and the pain and heat of the breast greatly lessened; and before a second period of the same length, the hemorrhage from the finger entirely ceased, the swelling of the whole arm was nearly removed; and, with the assistance of some tonic medicines, the general health was restored; all the distressing symptoms were completely removed; and the complexion, from an extremely pallid hue, became clear and healthy. No relapse has ever occurred; and the patient has often assured me, that she has enjoyed better health, and feels considerably stronger in her constitution, than she ever did, before being under my care.

I think that there can be little doubt, that this case, extending itself as it was, and marked by all its peculiarities, would soon have reached a point of extreme danger, not only as to bodily suffering, but as to the continuance of life itself.

CASE III.

Miss Thorpe, formerly residing with a Mrs. Maberly, in Portman Place, Edgeware Road, was a young lady of a delicate and irritable constitution, and might be called of nervous temperament. From some accident which befel her left breast, she suffered, for some time, considerable pain, and by degrees, a small glandular tumour was formed, which, as her general health was free from cold or fever, gave but little uneasiness. When less

well, however, than usual, and at particular periods, the pain and tumour sensibly increased.

The patient, having found no advantage from any previous medical advice, at length consulted me; but, at this time, was very feverish, and subject to head-aches, and considerable *hemorrhage from the nose**. Under these circumstances, I resolved on a mild anti-phlogistic plan; and as soon as the symptoms were abated, I found the pulse considerably below the regular degree of health, being very quick and weak. At this time also, the hemorrhage at the nose was increased, and the general strength reduced, and the mind of the patient in a state of the greatest dejection.

I now determined on the use of oxygen gas, in this as in the preceding cases, with a view to the restoration of a more equable circulation, and the recovery of the general strength. In a few days, the warmth of the extremities was become more natural, the pulse firmer, and the spirits extremely improved; more especially as the pain in the breast was considerably lessened. After adhering to this plan for a few weeks, the tumour was softened, and, by degrees, even perfectly removed; and the constitution was so much renovated, that by taking some mild tonics for a few weeks, she became stronger and in better health

* In passive hemorrhages as the nose, or uterus, the use of oxygen air has in various instances cured the patients.

and spirits, and more regular in her constitution, than she had ever before experienced. Two years after her cure, she was married, and has had a family; and no return of her complaint has ever happened.

In studying the peculiarities of the female constitution, it is obvious that the whole frame sympathises in a wonderful manner in any irregularity, by excess or deficiency in what may be called regular health. The hemorrhage from the nose, in this patient, as well as the pain in the tumour, were evidently (as in the preceding case) connected together; but as soon as the powers of the constitution were so far invigorated by the common circulation, the distressing symptoms of pain in the breast, and hemorrhage from the nose, disappeared.

CASE IV.

Mrs. ———, living a most anxious life, as the wife of a naval officer, at the time much employed in the Mediterranean, suffered so much mental distress, as eventually to affect her general health. On a sudden, she was attacked with a pain and swelling in her right breast. Her constant solicitude increased this pain, which soon became accompanied by a swelling and sore heat, with puckering of the nipple, and irritation and swelling of the glands under the arm.

During several months of suffering, more than one medical man of character was consulted, and at length it was strongly recommended to the patient, to have the tumour dissected out, the neglect to do which would otherwise end, it was conceived, in the production of an open cancer. With this distressing prospect before her, Mrs. ———'s general health now became still more impaired; and, by degrees, a hectic, quick pulse, with pallid countenance, and constant pain, led her to consult me, in the hope of escaping from a surgical operation. During the first symptoms of pain and fever, I directed common sedative remedies, with James's Powder; but I soon found that these medicines produced but a very limited effect. The constitution seemed to require support, and the quick hectic pulse to be arrested; and, with all these peculiarities before me, I had recourse to the use of oxygen gas, as an alterative. By its aid, the pulse improved, the general irritation gradually lessened, and, in a few weeks, the painful feelings and hardness of the tumour were greatly reduced. As I still had to contend against that constant anxiety of mind, which first impaired the general health, I had recourse, a second time, to small doses of cicuta and bark, in various forms; by which treatment, and the daily use of oxygen gas, the patient, in the course of a few months, was perfectly restored. Although this lady suffered from several other feverish attacks at different

periods, yet, at this time, she enjoys very good health and spirits, and has never had any return whatever of the pain or uneasiness in her breast.

To place this case in a practical point of view, we may observe, that without the happy support of the general health and constitution; with the additional comfort of the prospect of a cure without surgical operation, this lady would probably have died, many years ago, of the fatal disease, under which she laboured; for, however it may be found, that an operation sometimes succeeds, yet in the general course of surgical practice, how numerous are the cases in which relapses and death follow! Taking into the account the anxiety of mind, and deranged nervous power, and consequent impaired health, which attends this disease, it is not to be wondered at, that the bodily powers, and living principle, are so far overcome, that, as is too often found, by surgical experience, little chance of life can be rationally expected.

CASE V.

Sarah Raymond, then nurse-maid in the family of ——— Saunders, Esq. No. 5, Upper Montague Street, Russell Square, possesses from nature a delicate constitution, and had, when I first became acquainted with her, an unusually pallid complexion, accompanied by every appearance of great nervous debility, and by a pulse extremely

weak and quick. I was consulted by her on account of a painful tumour in her left breast, one of the consequences of which, as usual, was dejection of spirits: her strength, at the same time, was greatly reduced. After having consulted several medical men, without deriving any degree of improvement in health, or finding any diminution in the size of the painful tumour, she was sent, as a last resource, to Saint Bartholomew's Hospital, where, at the end of an interval which was employed in unsuccessful attempts to confer benefit or ease, it was, as usual, recommended to dissect the tumour out. The terror of this operation (the day being fixed) so completely overcame the patient, that she resolved on leaving the Hospital, shortly after which she came under my care; her resolution being fixed, either to submit to continued suffering from her diseased breast, or to seek for a cure by some other means than dissection.

Under all the circumstances that have now been stated, including the state of the patient's mind, the weakened condition of the bodily powers may be easily conceived: and this was the case for which I was to find an appropriate mode of treatment. In the first place, I conceived it necessary to support the general health, and to inspire confidence into the patient, as justified by my past experience. As circumstances required, I directed either sedative or tonic remedies, in union with the oxygen gas. After a few weeks, the pain in the

tumour lessened. The absorbents gradually removed the hardness ; her general health, strength, and spirits improved ; and, in a few months, she left me, perfectly free from all suffering and anxiety ; and she has never since experienced any symptom of her afflicting disease.

CASE VI.

Miss H. after suffering, for a length of time, under considerable mental anxiety, which, as usual, weakened her constitution, became, through the effect of some accident, further afflicted with a painful tumour in one of her breasts. During a period of some months, various remedies were resorted to, under the direction of an eminent surgeon, but with little or no benefit, either as to the alleviation of the pain, or diminution of the hardness. The delicate state of her constitution, combined with anxiety of mind, which was kept up by a continuance of the original cause of distress, and with the addition of disease and pain, soon produced hectic symptoms, with a weak and quick pulse, and a general loss of bodily strength, and paleness of countenance.

The patient was in this state, when I commenced the trial of oxygen gas, with a view to lessening the hectic symptoms, combining its use with that of sedative medicines, intended to allay general irritation. Pursuing this treatment, till I

found the pulse reduced to a more moderate standard, I then exchanged tonics for sedatives (still continuing the oxygen gas) till all the painful symptoms were removed.

After adhering to this system of treatment for some weeks, my patient was under the necessity of leaving town ; but, through a perseverance in the same medicines, assisted by greater tranquillity of mind, (produced by the change in her local situation) her general health was perfectly restored, and no return of her disease, has ever come within my knowledge.

CASE VII.

—— Clift, was servant to the late John Warre, Esq. of Stratford Place, by whose recommendation (as a case of the last stage of cancer) she came under my care.

It will be somewhat difficult to describe the full extent of the complication of the disease in this case. The entire breast was largely projecting from the chest, in a state of stony hardness, and, at the same time, there was a wide and deep ulceration in the axilla, or arm-pit, extensively connected with two other considerable openings, of which, one was above the clavicle, or collar-bone, and the other situated anteriorly, on the side near to the breast. The discharge from these evidently-connected surfaces, was in the greatest quantity

from the large opening in the axilla. At my first seeing her, I found the arm perfectly useless, and all the bulk of the muscles nearly absorbed. The arm seemed only to hang to her body, which inclined much to the weakened side. The constitution was rapidly advancing to the extreme of hectic, produced by the combined and increasing discharges, the constant pain, and the absence of sleep. The pulse was considerably above a hundred beats in a minute.

The disease originated in an accidental injury of the breast. A surgeon in the country was some time afterwards called in, and various applications were resorted to for some months, with little effect. On the patient's removal to town, an eminent practitioner was consulted, who, along with other remedies, recommended sea-air, with the addition of sea-bathing, for the benefit of which, the patient resided for some months on the coast of Devon. Under this regimen, the general health was much improved, but the constitution was still unable to surmount the disease; and, on a return to town, a few weeks brought it back with redoubled violence. There was now every appearance of an incurable cancer, and no hope of relief was entertained from any plan suggested either by the surgeon first consulted in the country, or by Sir ———, surgeon, of London.

At this time, the cure described in the case which is to succeed the present, having reached the ears

of Mrs. Warre, that lady thought it possible that this afflicted patient might be relieved at my hands.

I tried, accordingly, for a few weeks, the remedies which I used in the next case, but did not find the constitution acted upon to any good purpose ; on the contrary, I saw the general strength rapidly sinking under the profuse discharge of an offensive bloody matter from the several openings, with a quick hectic pulse ; the nervous powers being at the same time extremely overcome. I now determined to have recourse to the oxygen gas, and after this, I soon found that the pulse improved, the painful irritation in the several wounds gradually diminished, and the matter became less offensive, and of the nature of good pus. With these favourable appearances before me, I considered linseed meal, as a poultice, the best external application. At the same time, I directed an occasional sedative at night, and was no less particular in regulating the bowels ; and, as the pulse became more firm, through the daily use of the oxygen gas, I resorted, from time to time, to the use of the bark. From the union of these means, the lapse of a few weeks restored the motion of the arm, while the general colour of the skin resumed a more healthy appearance. All the sensations of pain were removed ; and, as the mind became more composed, natural sleep returned. In three months, the arm was greatly increased in bulk, and had acquired so much mus-

cular strength as to enable her to wash her linen, and do whatever else was necessary for her personal comfort. The general plan of treatment was continued, till the granulations progressively filled up the deep sores under the arm; but the upper and lateral sores, though with very little discharge, still seemed to resist, when, on a sudden, I had to encounter a new difficulty, from an evident collection of some fluid deeply seated under the hard breast; and which was soon found to make its way toward the bottom of the breast, where it formed a painful distension under the cellular membrane. Dr. Mathew, who had before seen this case, happening to be with me, joined in opinion that an opening was here necessary. This I immediately determined to form by means of caustic. A large one was applied, and through the scar, I made a deep puncture with the lancet. Through the puncture, several ounces of offensive bloody pus was gradually discharged; and, this depending opening being continued, and all other means persevered in, a few weeks completely healed the opening above the clavicle, the lateral one, and that under the axilla. Every other favourable symptom followed; and, in the course of a year, the general health was perfectly restored. The hard substance of the breast became much softer, and was greatly lessened, and never afterward gave her any pain or inconvenience whatever. Soon after her recovery, she engaged her-

self as servant to a lady (Mrs. Raynsford) then going to the Cape of Good Hope, at which place she resided two more years, in good health, and then returned with the family to England, still without any symptom of indisposition. While the disease was at its height, I shewed the woman to the late Drs. Denman and Croft, and to several other medical men, particularly the Committee of the late Cancer Institution, in Tottenham Court Road ; and Dr. Denman saw her many times after her cure.

CASE VIII.

Mary Hands, formerly pew-opener at Percy Chapel, at the time when the Rev. Mr. Mathew, No. 3, Russell Place, was Preacher, was of a strong and healthy constitution, and accustomed to get her livelihood by washing. In early life, she had three children. By some accident, she bruised her right breast against the edge of the washing-tub, and very violent pain ensued ; but as this latter soon after ceased, she took no notice of her situation, except that on applying any hard pressure to the breast, or on turning quick, or any unusual exertion, a degree of pain returned, extending itself to the shoulder. This, during the first five years, was all the inconvenience that she suffered ; but, at the expiration of this period, and about the change of life, a small hard tumour

on the anterior part of the breast became sensibly uneasy to the touch, and very painful.

The tumour, by slow degrees, grew larger; and, in the course of another period of five years, not only the distension and pain were increased, but a dark purple discoloration gradually surrounded it, in which state it at length broke into several small open sores. During the progress of the disease, Dr. Mathew, of Russell-place, had often been consulted; and that gentleman, seeing, even in its early stage, its fatal tendency, had strongly recommended the operation of dissecting the tumour out. This advice, however, the patient obstinately resisted, telling Dr. Mathew, that her eldest daughter, who at twenty-five years of age, had laboured under the same disease, had yielded to the extirpation of her breast, but died of cancer within five months after. On this account, Dr. Mathew contented himself with directing remedies for the alleviation of the pain, and in so doing, certainly retarded the usual rapid advance to ulceration and its consequences. But the ulcers being at length formed, and having spread themselves into one, the discharge from that surface was bloody and ichorous, and very offensive and abundant. The tumour was deeply seated, and the nipple drawn in with the usual puckerings of the cancerous encroachment, and there was a no less painful swelling in the arm-pit.

It was in this stage of the disease (the patient's

age being now sixty-six) that the case was recommended to my care, in conjunction with that of Dr. Mathew, who gave it over to me, emphatically saying, "If you cure this case, *eris mihi magnus Apollo.*" The patient was evidently much reduced in constitution, her pulse was hectic, and very quick; and her countenance strongly expressive of bodily pain, and distress of mind. My first attention was given to her diet, which I directed to consist of food light of digestion; as, jelly from gruel well boiled, and the jelly of sheep's trotters, to which was added, a little porter, once a day, and when the stomach would bear it, a small quantity of animal food. I paid constant attention to the state of the bowels, giving occasional doses of rhubarb and salpolychrest; and, instead of common tea, I directed a weak decoction of dulcamara, twice in the day: in the mean time, the leading active remedy was an *alterative pill*, connected with a sedative remedy, and such doses of opium as the symptoms seemed to require. A considerable discharge from the kidneys was now produced; and, under the influence of the remedies employed, I observed the appearance of the external sore to be gradually improving, while the countenance assumed a more healthy character. In a few weeks, the bloody discharge lessened, the offensive fetor was nearly removed; and, at various points, the edges were disposed to heal. The deep-seated hardness of the breast gradually yielded

to suppuration, and was digested away; and, in about four or five months, all the distressing features of the disease were completely removed.

At the period now referred to, an appearance of inflammatory state of the habit having supervened, I suspended the previous treatment, and directed James's powder, along with antiphlogistic medicines. To remove all the symptoms was a work of some time; but, as soon as the general quiet of the constitution was restored, and the remedies just mentioned became no longer necessary, I returned to the use of the pills and diet as before, and had very soon the satisfaction to see the patient so much recovered, as to be able to return to her old habits of industry, by means of which she earned her livelihood as formerly. In eleven months, her cure was complete. No remains either of the hardness of the breast, irritation on the nipple, or pain under the arm, in the least degree subsisted. In the course of the year, I requested Dr. Denman to see the woman; and so perfect was her recovery, that he asserted it was no case of cancer, assuring me, that no real cancer was ever cured.

To overcome Dr. Denman's scepticism on this point, and attempt his conversion by a fair statement of the grounds upon which I judged the cure of a real cancer to be practicable, I submitted to him my own theory, and the results of my ob-

servations and reflections. I remarked, that during the continuance of the natural and regular state of the female constitution, I had succeeded in the cure of many diseased breasts by the use of oxygen gas, aided by the use of such remedies as further supported the constitution; and this merely (as I conceived) by restoring the powers of the living principle. I had found, that in this manner, I could bestow a more regular circulation, renew the constitutional strength, and increase the nervous power; but I had also invariably observed, that after the period or change of life from forty and upwards had taken place, when any tumour of the breast becomes ulcerated, the oxygen gas was limited in its influence, and, when its use was long persevered in, rather injurious than otherwise. Now, from this latter fact, I had drawn a conclusion, that some quality of the blood, independent on mere constitutional plethora of the habit, was added by absorption from the uterus, greatly increasing the disease itself, and constituting the destructive force of the inflammation. I added, that it was too well known that neither Dr. Denman nor any one else had yet found any means of arresting the devouring and fatal malady; and, that for my own part, I conceived the rapid, painful, and consuming inflammation in question to arise from some modification of an hydrogenous phosphoric nature, and that the product might, in fact, be phosphurated hydrogen, which, uniting

with the oxygen of the atmosphere, acting on the surface of the cancerous sore, and with that inspired by the lungs, becomes the source or agent of that active combustion, or cancerous inflammation, which is destructive of the animal substance, and which, when commenced, it has been found so difficult to interrupt. But in the case of this woman, I had so contrived, by means of diet and medicine, to alter the combustive process, and remove the peculiar species of inflammation, as to enable me to effect a cure. I further observed, as an additional fact, that whenever fixed (or carbonic acid) air* was carefully and judiciously applied to a cancerous sore, the burning pain, even in the most irritable case, was almost instantly relieved. I had seen this in various instances, and the fact plainly proved, that a kind of extinguisher is by this means instantly put upon the animal combustion. The process of applying this air, and keeping it constantly upon the surface, present the leading difficulties, more especially as I have seen several instances in which a kind of decomposition of the carbonic acid gas has been curiously observable, the ulcerated surface being coated with charcoal, while (apparently by a union of the oxygen with the phosphorated hydrogen disengaged from the ulcer) water was formed, so as to completely moisten the dressings, and render

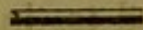
* Dr. Ewart's case, Bath.

this mode of management useless. But these instances have presented themselves where the disease was far advanced towards a fatal period, I had occasion more particularly to observe in the case of a sister-in-law of the late eminent surgeon, Mr. Sharpe, of Fulham, whom I attended at the special desire of my kind friend, the late Sir William Dolben, as also in two other cases, which likewise proved fatal.

Dr. Denman, in reply to my arguments, declared, that whether or not my hypothesis was correct, was more than he could determine; but that from an early date in his practice it had become a fashion to recommend ladies to leave the change of life to nature, as he termed it, while his experience had shown him, that cancerous affections of the breasts and uterus had, from the same date, increased beyond all calculation. "Therefore," said he, "I earnestly wish you to collect and publish your cases, with all your practical remarks, and theoretical opinions."

In conclusion, and in reference to the remark of Dr. Denman, I must be permitted to add, that ladies ought to be extremely careful in having proper medical attendance to superintend their constitutions as they advance in life; and more especially to be guarded in not submitting hastily to the operation of the knife. For, however, the removal of the tumour may, for a time, afford some ease and mental relief, yet in what numerous in-

stances does not the disease, after the remedy has been resorted to, terminate fatally? In the cases, on the contrary, which have been above detailed, the original tumours having been removed by absorption, and the constitution restored, while the mind is kept free from apprehension, the disease may never return, nor even a single symptom again betray itself. In support of an expectation so important and so consolatory, I can conscientiously affirm, that in none of the first seven cases above detailed, has any relapse, to my knowledge, taken place. In a part of them, the subjects have now been free from any complaint of the kind for more than twenty years past; in all but two, the females are at this time living, as far as I know, and in most of them that period of life is passed, in which danger is to be particularly apprehended.



In the preceding division of this work, I have submitted to the examination of the public my views, supported by cases, of the applicability of oxygen gas, with proper regulations and accompaniments, to the cure of scrofulous ulcers, gangrenes, diseases of the bones, backward growth, cases of deformity, and generally to all afflictions of the body, of which nervous debility, or the absence of a due portion of vital strength, and

equable circulation, are the primary causes; and in so doing I announced my intention of offering, at no distant day, a further developement of the opinions which I have been led to adopt in connection with this branch of medicine, together with new and analogous cases, particularly as to the successful treatment of diseased breasts, and cancerous swellings and ulcers, by the cautious exhibition of oxygen gas, aided by other remedies, as demanded by the particular symptoms and circumstances.

It has for many years been my persuasion, that scrofula, gout, and cancer, are no other than modified results of the presence in the system of the same hydrogenous, and perhaps phosphoric principle, of which the results are varied by the progressive changes of the body, from one period of human life and growth to another. Without recurring, in this place, to the details of several of the cases just referred to, in which the operation of an inflammatory principle has manifested itself, the wide extent of the ravages of such an enemy, in cases of gout, rheumatism, scrofula, and, more than all, in cancer, may be assumed upon grounds which are but too evident; for the general influence of an agent like this, is seemingly alone competent to effect those various decompositions of the bony, ligamentous, and all other parts of the body, as witnessed in the latter disease. The burning sensation experienced in cancer, with the

decomposition of animal matter which accompanies it (with the results, as they appear in the late Dr. Crawford's Analysis of Cancerous Discharge*) are powerful testimonies for the theory proposed.

The artificial communication of oxygen gas to the animal system, appears to be capable of two very distinct operations. In cases of mere debility, oxygen gas, or vital air, medically applied, imparts a warmth and a healthy vigour to the constitution, promotes all the natural secretions, and conquers those diseases, which, either general or local, have had their origin or prolongation in the bodily weakness of the patient. It is thus that in indolent, obstinate ulcers, where, as I have before observed, one great object of surgical practice is to excite a due action in the vessels, and thus generate a granulating and healthy process, oxygen gas acts for the benefit of the patient by means of the vigour which, through the medium of the lungs, it imparts to the vascular system in all its parts, and in the region of the ulcer among the rest. But there is still, in the instance of the same ulcers, another principle, on account of which

* The matter of cancer examined by Dr. Crawford, gave a green colour to syrup of violets; potass produced no change, but sulphuric acid extricated a gas which possessed many of the properties of sulphurated hydrogen. This gas he supposes to be in the matter united to ammonia. The presence of this compound explains the effects of the matter of cancer, and virulent matter in general, upon metallic salts.

benefit is to be obtained from oxygen gas. This is the presence, in cases of inflammation, of an excess of hydrogen gas; the chemical neutralisation of which, by its union with the oxygen gas, and its influence on the constitution, promotes the cure of the disease. Under these aspects, we may almost say, that oxygen gas has two operations on the animal body; the one mechanical and the other chemical.

That the human body is exposed to disease from the presence and quantity of an hydrogenous, and in cancer, a phosphoric compound, and that the specific disease thus produced is animal combustion, modified by circumstances, and generating cancer, as one of its forms, is, I think, rendered, first, probable, and then indisputable, by the consideration of a variety of facts.

Phosphorus is a peculiar substance, chiefly of animal origin, and is at present generally obtained by the decomposition of phosphoric acid, which last is found in bones. Some have even supposed it to be a product of the process of animalization; and several curious facts might be adduced to strengthen this opinion. It is found in human bones, in the teeth, and in the urinous, and other secretions. But the presence of phosphorus, and its active employment in a healthy state of the animal body, being once ascertained, its occasional diseased action and excess, are easily admitted as supposable, as well as its union with a diseased excess either of

hydrogen or nitrogen ; and this basis of our argument being allowed, it will be seen that the theory of cure of cancerous tumour, as already given, by means of oxygen, or vital air, supposes a restoration of the healthful equilibrium of the chemical elements of the animal composition, together with a general invigoration of the system by the artificial and forced introduction of the great living principle. The diseased presence, and excess of the phosphoric or hydrogenous principle in the human body, being once imagined, it is not difficult to assign reasons why women are more liable than men to the generation and ravages of cancer, as a disease of local combustion. Women of a certain age, and particular advanced periods of life, are more subject than men to obesity, from being more sedentary in their habits, whence the hydrogenous and phosphoric principles become peculiarly abundant in their systems. This abundance, as a more ordinary consequence, renders them particularly liable to ulcers in the legs, which, when once commenced, are exceedingly difficult of cure ; but when, under still more unfortunate circumstances, it discovers itself by its attack on any deranged or obstructed organ or gland, as in the uterus or the breast, the spontaneous or animal combustion which it produces, is the disease known by the name of Cancer ; a disease in which the distress of mind aggravates the symptoms, and accelerates the burning progress of the suffering

patient, until life itself is extinguished in the animal frame, and the body sinks to moulder in the grave.

I have proceeded above upon the assumption that the hydrogenous and phosphoric compounds* are among the elements of the human system. Carbon, hydrogen, oxygen, and nitrogen, are the principal substances that enter into the composition of human bodies †, with which are often united phosphorus and sulphur. The presence of nitrogen in the animal body constitutes its most striking peculiarity, as compared with that of vegetables; and in some cases of animal decomposition, nitrogen appears to hold phosphorus in solution; and, when phosphorus is presented to nascent hydrogen, two gaseous compounds result, of which one inflames spontaneously, upon contact with the atmosphere ‡.

A paper, by M. Pierre-Aimé Lair, inserted in the *Journal de Physique*, and transcribed by Dr. Trotter, in his *Essay on Drunkenness*, p. 19, contains a numerous list of cases of animal combustion, the *modus operandi* of which is explained by the author in a very satisfactory manner, and will

* Phosphorus and nitrogen produce no definite compound, though, in some cases of animal decomposition, the evolved nitrogen appears to hold phosphorus in solution.—Brandé's *Chemistry*, page 140.

† See Brandé's *Chemistry*.

‡ Brandé's *Manual of Chemistry*, Chap. VII. p. 128.

be found to agree, in more or less extent, with the æsiology of the disease of which I have spoken. M. Lair, after carefully examining the grounds of credibility on which his several examples stand before the world, then ventures to deduce from them certain general principles. First, that the persons who experienced this combustion, had for a long time previously made an immoderate use of spirituous liquors. Secondly, the combustion always took place in women. Thirdly, the women were far advanced in life. Fourthly, their bodies did not take fire spontaneously, but were burnt by accident. Fifthly, the extremities, such as the feet and hands, were generally spared by the fire. Sixthly, water, sometimes, instead of extinguishing the flames, which proceeded from the parts on fire, gave them more activity. Seventhly, the fire thus kindled, did very little damage beyond the body in which it was kindled, and often spared combustibles that were in immediate contact. Eighthly, the combustion of the body left a residuum of fat fetid ashes, with an unctuous, fetid, and very penetrating soot.

Now, admitting the reality of the animal combustion supposed by M. Lair, and attending to the phænomena, and to several of the general observations above quoted from the author, a remarkable correspondence will be acknowledged between these extreme cases, and that description of *combustion* which I regard as the cause of

Cancer *. In many of the statements of what has been called animal combustion, there may be exaggerated particulars; but, on the other hand, this animal combustion takes place in many instances with respect to which the name is never employed. Under this view, too, the combustion of the human body, in the manner reported, which, at the first suggestion, appears to have something of the marvellous, exhibits, when explained, only a process of the utmost simplicity, and such as is easily conceivable to be within the limits of nature.

In the treatment of cancerous ulcers, I have seen the linen and dressings nearly coated with an offensive carbonated appearance; and I have ever found that the ulcers of drunkards are always, more or less, difficult of cure, especially where the use of strong spirits is persisted in. At Guy's

* Appearances, as if from the action of fire, have been commonly observed in Cancer. Mr. Fearon, in his Treatise on Cancer, thus describes its peculiar character. "The ulcer is foul, stinking, spreading, with hard uneven edges, from whence fungus sprouts out, of a raspberry or cauliflower appearance, subject to frequent hæmorrhage. The discharge, for the most part, is thin, gleety, acrid, fetid, dark-coloured, ichor, and the patient complains of an incessant, intolerable, excruciating, burning pain, all over the parts affected. The neighbouring skin seems partially contracted, with the appearance of folds or wrinkles, *as if produced by a hot iron having been held near to it.*"—Treatise on Cancer, &c. by Henry Fearon, Surgeon to the Surry Dispensary, London, 1790, 8vo. p. 20.

Hospital, when attending and dressing my patients as a student, I was invariably competent to pronounce, without fear of error, upon the drinking of strong spirits on the preceding evening, by the aggravated appearance of the sore, with a tendency to gangrene; when the common fomentation of the Hospital was applied with a high temperature of heat, which was too often applied in sores accompanied with a scorbutic and relaxed habit of body, the hydrogenous fetor was often excessive. In such cases, the application of carbonic acid air, has frequently proved extremely useful, not only as a means to allay pain, but to correct the fetor of the discharge, and when the oxygen gas is judiciously given to support the constitution, the most malignant sores are often completely cured. I know no remedy of equal good effects, as carbonic acid gas, when introduced into deep sinuses and fistulous ulcers of various cases, which no other remedy can so conveniently reach, or so effectually palliate, and often cure.

I can adduce a strong instance of the efficacy of this gas, when applied to the painful surface of an amputated finger, where the sense of pain was very acute, after making some necessary ligatures, and on the patient placing his hand in a jar, filled on purpose with carbonic acid gas, the pain was instantly removed, and the expressions of the patient were, that he should not know that he had lost his finger; but when it was again exposed

to the common air, the same acute pain returned, but was instantly removed, on a second immersion in the same gas. This strong fact may suggest, to operating surgeons, a simple mode of affording to many of their suffering patients, the greatest ease and comfort, for in no less degree will this local application of carbonic acid gas afford ease and relief, to many of those distressing cases, which have been so recently and judiciously enlarged on, by Mr. Charles Mansfield Clark, in his elaborate **Treatise on Female Diseases.**

THE END.

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