which can be so advantageously used in this and other disarticulations; grasping the head of the bone, therefore, with my fingers, I readily completed its disarticulation, and carrying the knife down the inner aspect of the upper arm, effected the separation of the limb, having reserved the whole of the integuments of that surface as a covering for the stump. The axillary, or rather, the brachial artery was divided at the termination of the last incision.

On the limb being separated, the main artery was at once secured, and twelve other vessels that required ligatures; a small portion of the disease that I had shaved off from the tumour in forming the inner flap, and with it, a large portion of the healthy muscle, were removed; the anterior boundary of the axilla had been freely cut away; and no doubt existed upon the minds of those present, that all the disease, and much of the healthy structure surrounding the tumour, had been excised. The flaps were laid together, and united by four points of the interrupted suture, straps, and a bandage; and the patient, who had borne the operation with the greatest fortitude, was placed in bed. On a careful dissection of the tumour being made, it was found to consist of a cerebriform mass, surrounded by a distinct cellular capsule, which separated it from the surrounding muscles. In the centre of the tumour was a large cavity, filled with portions of the tumour broken up; this cavity communicated above and below, with the medullary canal of the humerus, into which the finger could be passed. Intermingled with the walls of the cavity were portions of the cortical structure of the humerus, much thinned, the head and neck of the bone being, in fact, connected with the rest of the shaft, through the medium of the growth. On a section being made of the humerus and the tumour, the cancellous structure forming the head of the bone was found to be perfectly healthy; but in the upper extremity of the lower portion of the humerus, a small medullary mass was found filling up the medullary cavity, and extending down the canal for an inch, when it abruptly ceased, and all further traces of the disease were lost. Various membranous septa, imperfect at points, traversed the sac, dividing it into cavities communicating with one another. The muscular structures in contact with the tumour were healthy, except at their insertions, which were involved, with the periosteum, in the disease. In colour and consistence the tumour intimately resembled a scrofulous gland; and its anterior surface was marked by a deep groove, in which the long tendon of the biceps rested.

Five P.M.: No hæmorrhage; has suffered some pain; complains of thirst; in other respects comfortable.

22nd.—Had passed a good night; pulse 120; skin hot; tongue moist.

23rd.—The bandages, straps, and stitches were removed; adhesion had taken place throughout the wound, except in front, where a small portion of the pectoralis major protruded; the wound was dressed with straps and warm water dressing; his bowels had been fully relieved; the pulse was 108; and the skin was cool. He continued to progress thus favourably, (two ligatures separating on the eleventh day,) until

May 3rd.—Thirteenth day: the report is:—Pulse 94; bowels relieved; secretions of a healthy character; skin cool; the wound discharging healthy pus. At the dressing, one of the ligatures came away, and a little more force was used in applying the straps, so as to bring the parts forwards and upwards.

At eight in the evening, Dr. Jardine was suddenly summoned to our patient, in consequence of hæmorrhage from the stump. On my reaching him at midnight, I learned that he had continued well throughout the day, but that about eight P.M. a considerable quantity of fluid blood escaped from the points where the ligatures issued; the whole stump had become swollen and tense; no purulent discharge had taken place; his pulse had risen to 120, and his countenance betrayed great anxiety. Dr. Jardine, upon his arrival, had ordered ice to be applied to the stump, by means of which the hæmorrhage had been subdued. Deeming it of importance to have the advantages of light and assistance to secure the bleeding vessel, should that be necessary, the bleeding having ceased, and no circumstance calling for immediate interference, we determined upon waiting until the morning, our patient being carefully watched throughout the night.

4th.—Nine A.M.: A slight quantity of blood had oozed out during the night; the flaps were tense, and the whole stump was more swollen. In consultation with Mr. Fergusson, it was decided that the dressings should be removed, and in the event of the hæmorrhage continuing after the evacuation of the fluid from beneath the flaps, I should endeavour to secure the vessel through an incision on the surface of the stump. On the strap being removed, some fluid blood flowed out, which was followed by a considerable quantity of bloody purulent fluid, which at once explained the cause of the mischief; no blood followed its complete evacuation. A single strap and warm water dressing were applied.

5th.—The stump has resumed its usual appearance; no hæmorrhage had taken place, but several clots had been discharged with the purulent secretion, which had been very profuse. His pulse was 92, and he was in every respect progressing favourably.

7th.—A ligature came away.

9th.—Two ligatures separated; wound looking healthy; discharge gradually decreasing; expresses himself much relieved by the loss of his limb; sleeps well.

13th.—Two ligatures came away at the dressing, one of which was the thread placed on the main artery.

14th & 16th.—Two ligatures were detached on both of these days.

From this date the stump continued to progress favourably; there was for a time a discharge of synovia from a sinus, and a small sore remained open. He recovered his health, and we had every reason to hope that his case would be an exception to the general rule.

In the commencement of the month of August he appeared to be unwell, his appetite, which had been remarkably good, failing, and his rest becoming broken. On the 19th of that month, he struck a cat with a stick he happened to have in his hand, and at that moment the right humerus was fractured exactly at the same point as in the other limb which had been amputated in April. The fracture united, but another tumour was developed at its side, resembling that removed by operation from the other arm; the stump at this period became swollen, and in a very short time a bleeding fungous mass protruded from it. The disease appeared to progress more rapidly in the stump than in the remaining limb; he continued to linger on until the 8th of January, 1847, when death terminated his sufferings. A *post-mortem* examination was not obtained.

The remarks on this case will appear in a future number.

Gower-street, Bedford-square, Sept. 1847.

ON THE

INHALATION OF CHLOROFORM AND ETHER.

WITH DESCRIPTION OF AN APPARATUS.

By JOHN SNOW, M.D.

In January last I laid before the Westminster Medical Society an apparatus which supplied the means of regulating the proportions of ether vapour and of air during inhalation. By means of this inhaler, it was, I believe, first ascertained that every patient might be rendered insensible by ether, and that all failures must arise from inefficient means of administering the vapour, and not from any idiosyncrasy of the patient. After observations for a few months of the exhibition of ether in this uniform way, I was enabled in the course of last autumn to submit to the profession a description of etherization divided into degrees, which I still consider to be correct, and to be equally applicable to the effects of chloroform, and other agents of a similar kind.

I divide etherization into five degrees, which may be called degrees of narcotism. The division was made according to symptoms which may be observed before an operation begins, leaving out of the classification the immunity from pain, which can only be ascertained during the operation, and which, curiously, does not correspond uniformly with the state of the patient in other respects. In what I called the first degree, there is exhilaration, or altered emotions and sensations of some kind; but the patient still retains consciousness and volition. In the second degree, the mental functions may still be performed, but only in an irregular manner; there may be ideas of a dreaming kind, and voluntary efforts in accordance with them, or the patient may be passive. When mental excitement occurs, it is chiefly in this degree, in which the functions of the cerebral hemispheres seem to be impaired, but not yet abolished. In the third degree, these functions appear to be totally suspended, but those of the spinal cord and its nerves still continue to some extent; the orbicularis palpebrarum may contract when the eyelids are touched; there may be other involuntary motions resulting from external impressions, and groans or cries may occur, but no sounds of an articulate kind. There are also sometimes, in this degree, involuntary muscular contractions as an effect of the vapour—apparently a kind of excitement of the spinal cord. In the fourth degree, no movement i

obvious, except that of respiration, which is unaffected by external impressions, and goes on regularly, though often with snoring or even some degree of stertor. It would seem that the whole of the nervous centres are paralyzed by the vapour, except the medulla oblongata. In killing animals with vapours, I have observed the breathing to be difficult, or feeble, or otherwise impaired, before it finally ceased; this stage I call the fifth degree. There can be no doubt that these degrees of narcotism correspond with different proportions of vapour which are dissolved in the blood at the time—proportions which I hope to be able to determine. A certain quantity of vapour disturbs the functions of the cerebral hemispheres; an additional quantity appears altogether to suspend these functions, and to impair those of the spinal cord, and probably of the cerebellum; a still larger quantity to suspend their latter functions, but to leave the medulla oblongata more or less unaffected. As the vapour escapes from the blood by the lungs, its effects go off, the patient passes from the fourth degree to the third, from that to the second, and so on, if the inhalation be not renewed.

It is seldom possible to perform an operation without signs of pain unless the narcotism is carried as far as the third degree, although, if performed in the second degree, the patient, being unconscious, might not remember the pain, memory being the continuance or revival of knowledge or consciousness, which is something superadded to mere sensation, and not the same thing. Some cases have indeed been met with, in which it is stated that patients felt no pain, although they had never lost their consciousness. I have not seen any such case. I do not, however, deny the possibility of it, but I am inclined to think it a mistake, and to believe that in these cases the patients had been unconscious without knowing they had been so, and had recovered their consciousness whilst still inhaling, before the operation began. My reasons for believing so are, that as vapours are often administered, the strength of them diminishes as the process goes on, by the cooling of the sponge or other apparatus, or by the liquid becoming exhausted, thus affording the patient an opportunity to recover; that on recovering, even after a long operation, the patient often asserts that he is not yet insensible, until he finds proof of his error; and that I have often known patients to be conscious during some part of an operation without feeling it, after they had been unconscious previously.

It is, then, generally necessary to carry the effects of chloroform or ether to the third degree, and sometimes to the fourth degree, to be certain of avoiding the pain of an operation; but whilst patients are recovering from the effects of the vapour, there is a greater immunity from pain, with the same degree of narcotism, than when they are first getting under its influence—consequently, it is seldom necessary to keep up the effect even to the third degree, especially with ether, which I consider has on an average a greater anæsthetic effect, in proportion to the narcotism, than chloroform. If some persons consider the anæsthetic effects of the new agent which Dr. Simpson has introduced to be superior to those of ether, it is probably because they have carried its effects further than they did those of ether—perhaps further than they had the power of carrying the latter with the means they employed. After narcotism *has been* carried to the fourth degree, the patient is nearly always insensible to the operation in the third degree; and when insensible in the third degree, generally remains so when narcotism has diminished to the second degree. With ether, indeed, it was frequently observed that the patient remained insensible to the knife after he had recovered his consciousness of surrounding objects, and could even talk rationally. This I have never yet observed with chloroform, although I have taken notes of fifty cases. This curious circumstance in the effects of ether has, I believe, never been explained. I have an hypothesis to offer in explanation of it. I have looked over my notes of cases of etherization, and have found that the instances in which the insensibility to the operation outlasted the unconscious state, with only one exception, occurred in subjects under twenty-five years of age.

This peculiarity, then, must depend on something in which the young differ from or exceed the old. Let us take the first characteristic difference between the opposite periods of life,—the rotundity and smooth-flowing outline to which youth owes its beauty and its chief feature: On what do they depend? They depend on the greater quantity of extra vascular liquor-sanguinis or lymph in the cellular tissue, connected with the more active nutrition which is going on. Next let us consider what are the parts whose functions are necessary to sensation,—doubtless the trunks and peripheral expansion of the nerves, as well as the nervous centres Now, M. Flourens, I think it is, has ascertained that ether applied directly to the nerves paralyzes them. The following is the way, then, in which I explain this curious enigma:—

The narcotic vapour dissolved first in the blood passes in a little time by exosmose through the coats of the capillaries into the extra vascular fluid, immediately bathing the nervous fibrillæ, so as to establish an equilibrium between the quantity in the blood and that in the lymph of the tissues. On the other hand, whilst the vapour is leaving the blood by the lungs, the current is greatest in the opposite direction—namely, into the vessels; but this process must occupy some time, especially in young subjects, in whom the quantity of liquor sanguinis, free in the tissues, is considerable. Now there is but very little lymph in the brain, cerebellum, and grey matter of the cord; the blood, both liquid and globules, in these parts is chiefly contained in the vessels in the young as well as in the old. Therefore, as the vapour leaves the blood, the central nervous matter, and particularly the cerebral hemispheres, escape from its paralyzing influence at a time when the peripheral expansion of the nerves, bathed in the not yet de-vaporized liquor sanguinis,—especially in the young,—remain incapable of receiving the impressions which constitute the first link in the changes necessary to constitute a sensation.

Chloroform, which is but very little soluble in water, probably does not permeate the coats of the capillaries by exosmose so readily as ether, and hence, perhaps, the reason why it never exercises its anæsthetic effects after the nervous centres have altogether escaped from its influence. The complete recovery of the mental functions before the return of common sensibility is but an extension, to a greater degree, of the almost constant phenomenon of the insensibility being greatest during recovery, as compared to the narcotism, and consequently the above explanation applies to ordinary cases in a minor degree, and to chloroform as well as ether.

Chloroform has certainly the advantage over ether of being less pungent, and of being, therefore, more readily inhaled. It has also one or two advantages not named by Dr. Simpson; it occupies less space, and therefore excludes less of the air that the patient breathes, as I stated in November. It has another advantage, in not exciting a profuse flow of saliva, as ether sometimes does, which is very troublesome; and when the patient is on his back, as is the case usually in important operations, the saliva, coming in contact with the glottis, causes coughing at a time when the patient would not cough from the pungency of the vapour. But some of the properties of chloroform which Dr. Simpson calls advantages as compared to ether I do not appreciate altogether as such. One is its greater rapidity of action. Ether required four or five minutes on an average to produce the full chirurgical degree of its effects on the adult. Now it might be desirable to shorten this time to a certain extent, but not, in my opinion, to less than two minutes, not only to give ample time to observe its effects, but also on account of a property in the action of this class of vapours, which has not, that I am aware, been alluded to; I mean, the cumulative property they have. They act, it is true, with great rapidity, yet, to become imbibed by the blood, to pass through the heart, and reach the nervous centres, must occupy a little time, and I have often observed the insensibility to increase for twenty seconds after the inhalation has been left off. I have experienced this cumulative property myself to extend to twenty seconds, by taking a few inspirations of vapour, leaving off, and looking at a watch: consequently, I like to have about six times this period, or two minutes, for producing complete insensibility; but when administered in the way Dr. Simpson recommends, chloroform often produces its full effects in much less time than this. He himself observes that he has seen a strong person rendered completely insensible by six or seven inspirations of thirty drops of it. Danger, it is true, may probably be avoided by putting a limited quantity on the sponge or handkerchief, but then the full effect might not be reached, especially as it cannot be determined how much the patient inhales of what is put on, and the dose would have to be repeated, so that this plan is not very applicable in surgery; and Dr. Simpson himself recommends that "one or two teaspoonfuls of the chloroform should be at once placed upon the hollow of a handkerchief, and immediately held to the face of the patient." He adds that "generally a snoring sleep speedily supervenes."

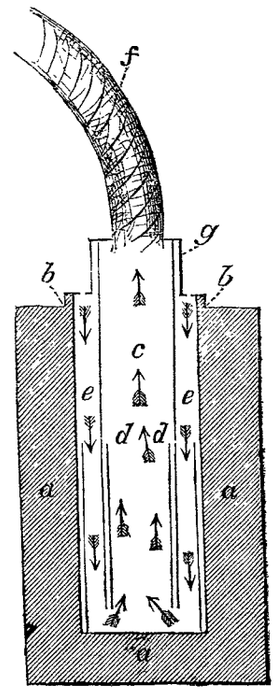
What he is pleased to call a snoring sleep I should denominate the fourth degree of narcotism, which is separated only by one degree more from a total cessation of respiration. I do not consider that snoring, or even some degree of stertor, is alarming or injurious, but I think it advisable not to induce this state with such great rapidity, lest the narcotism should

proceed a degree further on account of the cumulative property of the vapour after it is discontinued. Let us look at this matter in another point of view. 100 cubic inches of the vapour of chloroform contain 128 grains of the liquid. Half of this quantity is enough, if inhaled within a minute or two, to produce the most complete insensibility; the whole quantity, if inhaled rapidly, might undoubtedly cause death; for I have observed that animals may generally be killed by half as much more vapour than will produce narcotism to the fourth degree. If, for instance, an animal is rendered completely powerless in two minutes by vapour of a certain kind and strength, death takes place by continuing it for another minute; if rendered powerless in one minute, then it dies in about half a minute more. Now 100 cubic inches of vapour of chloroform may be contained in 800 or even in 500 cubic inches of air. When air is saturated with the vapour of chloroform at 60°, 800 cubic inches contain 100 of vapour, at 70°, 500 cubic inches contain the same quantity; so that the 128 grains of chloroform might all be inhaled in four or five deep inspirations, and, consequently, a person breathing deeply might inhale a fatal dose of chloroform in a quarter of a minute. This should be borne in mind, especially by those who recommend that patients should breathe deeply when inhaling. I always tell persons to breathe quietly, and when I find, during the inhalation of chloroform, that the inspirations are deep, I open the valve for admitting the external air to further dilate the vapour. I seldom induce total insensibility in less than two minutes, and occasionally take three minutes. The exhibition of the chloroform requires great care when it has to be repeated to keep up insensibility in a patient already under its influence, during an operation; and under all circumstances, it will require additional care in summer, except an apparatus with a cold water bath is used.

I for some weeks employed the same apparatus in the exhibition of chloroform which I had used for ether; but afterwards I contrived a more portable one, still employing this face-piece, which I have used with ether since June last. The

The dotted lines indicate the position of the expiratory valve, when turned aside for the admission of unvapourized air.

sides are composed of thin sheet lead, which can be moulded to fit the patient's features; and the expiratory valve turns on a pivot, so that it can be moved aside from the opening it covers, and external air admitted at the beginning of the inhalation, and at any other time if required. Mr. Hawkesley was, I understand, the first to invent a face-piece containing flexible metal, and including both the mouth and nostrils, admitting of respiration by both; but a face-piece contrived by Mr. Sibson, of the Nottingham Infirmary, was the one which suggested this, and I got it to its present form by several successive alterations, and in this shape it is extensively used. Mr. Robinson had it adapted to his ether inhaler, and since chloroform was introduced, he has put a sponge into it, and made some alterations in the valves, and thus formed an inhaler out of it for chloroform, which very properly goes by his name. One contrived by Mr. Coxeter, also, consists of this face-piece with some additions.* In this inhaler, which I now



Perpendicular section of inhaler on a scale of one-half the dimensions.

a a. Water-bath.
b b. Point at which the water-bath is screwed to the inhaler, and near which the inner cylinder is screwed to the outer one.
c. Inner cylinder.
d d. Point at which the inner cylinder terminates in wire, round which bibulous paper is coiled, the outer cylinder being lined with the same to this height.
e e. Outer cylinder.
f. Elastic tube.
g. Screw attaching tube to apparatus.

use, I retain the water-bath, but of smaller dimensions, the caloric absorbed in the evaporation of chloroform being very much less than in the case of ether. I never employ water of a higher temperature than 60°. The inhaler is suspended to the face-piece by a short piece of elastic tube, merely to allow of its being applied in all positions of the patient. The bibulous paper which absorbs and gives out the chloroform, only extends half-way up the cylinder, so that there is little or no loss by spontaneous evaporation, the air saturated with vapour being rather heavier than the air above.

I consider that, on the whole, chloroform is superior to ether for adults, and that we are greatly indebted to Dr. Simpson for the introduction of its use. For children I prefer ether to chloroform, when the choice is left to me, on account of the greater rapidity of action of these vapours on them, as I stated to the Society a month ago, although I have administered chloroform several times to young children—one of them aged only ten months—and with perfect ease, safety, and success. I consider the less powerful agent of the two, however, sufficiently strong for very young patients, and this chloroform inhaler serves very well with the small face-piece for exhibiting it to them.

Children are brought under the influence of ether, sufficiently for an operation, in two minutes, and I think it impossible for the imagination to conceive any anæsthetic agent more mild and efficient than ether is in its effects on children—a less degree of narcotism than in the adult producing an immunity from pain, and the liability to excitement being absent. The ether, however, requires to be given to them with an apparatus, by which the vapour can be introduced into the air they are breathing, in the most gradual way; otherwise the pungency of the vapour, when suddenly admitted, makes them hold their breath, which is the case with chloroform also when given to children on a sponge or handkerchief. If it is desirable, as I believe it to be, that we should have an agent which can be safely and generally

* It was described in the last LANCET, p. 154.

administered in this way to children, to women in natural labour, and for tooth-drawing, and minor operations, by persons of no special experience in the matter, it should be something much less powerful than chloroform, and less pungent than either of these vapours.

On account of its being in rapidity of action between chloroform and ether, I requested permission to give benzin in St. George's Hospital lately. It was made for me by Mr. Bullock, by distilling benzoic acid with slaked lime; it consists of six atoms of carbon and three atoms of hydrogen, and is the same thing as the bicarburet of hydrogen discovered by Dr. Faraday, and obtained by him from condensed oil gas. It succeeded very well in four cases of tooth-drawing without any disagreeable effects, and in an amputation below the knee it totally prevented the pain, and was followed by no ill effects; but being pushed rather further than in the other four cases, the patient, a woman, had some convulsive tremors for about a minute, which I consider as a peculiar result of the vapour when its effects reach the third degree, as the same vapour caused the same symptoms in two white mice and in some guinea pigs, and I never saw similar effects from ether or chloroform. Benzin, consequently, does not seem suited for severe operations. It has an aromatic odour; about the same quantity is consumed as of chloroform. About one drachm was used in the cases of tooth-drawing, and two drachms in the amputation, but being less volatile it does not act so quickly.

The property of totally preventing pain in severe operations, and on other occasions of acute suffering, is most valuable and important, yet these anæsthetic vapours sometimes confer still greater benefits.

I administered the chloroform, several weeks ago, to a gentleman, aged fifty-eight, on whom Mr. Coulson performed the operation of lithotomy. This patient had been suffering from diseased bladder for more than twelve months, and the operation was recommended and submitted to as the only means affording a prospect—and that but a doubtful one—of recovery. He was so nervous and irritable, and the bladder so sensitive, that he could be sounded only with the greatest difficulty. Sir B. Brodie and Mr. Sams, of Blackheath, the usual attendant of the patient, were present at the operation, which was extremely difficult and protracted on account of the calculus, which was of the fusible variety, being large, and breaking whenever it was grasped with the forceps. It occupied three quarters of an hour, the patient, of course, being kept perfectly insensible the whole time. Sir B. Brodie remarked that he had only seen one case of lithotomy so difficult, and he, Mr. Coulson, and Mr. Sams, expressed their conviction that the operation could not have been performed except for the insensibility produced by the chloroform.

The patient gradually and quietly recovered his consciousness in the course of a quarter of an hour after the operation was completed, and is going on well, but requires to have his bladder washed out, on account of phosphates and mucus in the urine, and he inhales the chloroform at his own request on these occasions.

I administered the chloroform also lately to a gentleman, to enable Mr. Henry Charles Johnson to reduce a compound dislocation, backwards, of the last phalanx of the thumb, which he had previously endeavoured to reduce without success, as the patient could not bear the attempt to be continued. When insensible, the dislocation was speedily reduced. Mr. Gaisford, of Brompton, was present.

I am not aware that any disease, or any state of the general health, forbids the inhalation of ether or chloroform, and it is fortunate that the least favourable subjects for inhalation are those least likely to require it—viz., persons in robust health. There is not, however, any serious objection to it in such persons; but there is occasionally a little difficulty, as they are more liable to excitement in the second degree, and to rigidity and struggling in the third degree of vaporous narcotism. It has been said, and I stated the same opinion myself in the *Medical Gazette* in March last, that disease of the heart or lungs, to any notable amount, contraindicated inhalation. I do not now deny this, but I am of opinion, that when persons so situated require a painful operation, inhalation of the vapour would be less liable to do mischief than the pain, or even the anticipation of it. The inhalation of chloroform quickens the circulation somewhat; that of ether, still more; and therefore I think the former would be preferable when there is any affection of the heart or lungs. I have given both vapours to patients with diseases of these organs, and have seen no ill consequences.

Mr. Thomas Wakley, after detailing an extensive series of experiments in THE LANCET, (present vol. No. 1,) draws the conclusion, that ether, and more especially chloroform, cause congestion of the heart and lungs during inhalation, and therefore would be dangerous in affections of these organs. He arrives at this opinion from the congestion found in some of the animals which were killed. I have met with the same congestion in animals destroyed by these vapours, under certain circumstances, but I do not consider it any proof that congestion exists during inhalation, confined within safe bounds. The arteries are nearly always found empty after death, but we do not conclude that they are empty during life. The congestion of which I am speaking arises from the circumstance, that in many instances in which animals are destroyed by these vapours the respiration ceases, whilst the circulation is still vigorous; they die, in fact, as if by asphyxia; and it is on this account that, to avoid danger in exhibiting vapours, we should attend to the state of the respiration, rather than the pulse.

Frith-street, Soho, Jan. 1848.

ILLUSTRATIONS OF THERAPEUTICS.

By RICHARD LANYON, M.D., LL.D., F.A.S., &c.

(*Continued from vol. i. 1847, p. 201.*)

Atonic Paraplegia.

If any disease merits the appellation of a living death, that disease is unquestionably paralysis. Fearful in its accession, attended by few mitigating circumstances in its progress, uncertain in its results, and problematical in its duration, it is not to be wondered at that its premonitory symptoms should be accompanied by the most awful apprehensions of immediate or future consequences, seldom admitting of removal or even palliation. Paraplegia, however, confined to the lower extremities, is not necessarily accompanied by mental imbecility, and is one of those forms of paralysis which admits of occasional restoration to health. The following case is a striking exemplification of the truth of these observations, and I trust its publication may afford assistance to the clinical observer, who, whilst he derives instruction from experience, is not a little indebted for his success to professional literature.

"Ex facto jus oritur."

Aug. 16th, 1845.—The widow of a marine officer, about fifty years of age, and the mother of several children, about a fortnight since felt a numbness across the loins, passing to the lower extremities. I found her tottering in her walk, with a depressed pulse of 86, mouth dry, slight thirst, and no appetite. She is in the habit of sleeping with an aged mother, and has frequent occasion to lift her in and out of bed at night, which probably may have laid the foundation of the remote cause of her complaint. Although she has not, during the former part of her life, been seriously ill, she has not the appearance of being a healthy person; she is thin and pale, without being delicate. Progression is performed with difficulty, but local sensibility is not destroyed; it is therefore paralysis of motion only. The urinary function is unimpaired, and the natural desire to pass the fæces remains inviolate; but when the excrementitious discharge is being effected, she is quite unconscious of it. There is not displacement of any of the processes of the spinal column, enlargement of the vertebræ, loss of ossific structure, or pain on pressure throughout. The sensorium is not implicated, and the cause is so insidious that the most strict investigation fails to detect the least depravity in the brain, or morbid tendency in the medulla spinalis. I began to treat this case by directing twelve ounces of blood to be taken from the arm, which was neither cupped nor buffed; but there was more than the usual quantity of serum. The bowels being inclined to be constipated, a mercurial pill was given at night, and a purgative on the following morning. The flesh-brush was freely used, and stimulating embrocations of mustard, vinegar, camphor liniment, &c., were as freely employed, which, in conjunction with an emetic, have been found so eminently beneficial in the practice of Stoll. Stimulating medicines were frequently administered, consisting of the aromatic spirit of ammonia, the compound tincture of cardamoms, sesquicarbonate of ammonia, &c. Subsequently she was placed in the hip-bath, and the same course of medicines pursued. Again and again the spine was most carefully examined, but the cause of disease could not be detected. Eventually I wrung from my patient, that about two or three weeks before she felt the numbness, she had been standing on the grass for an hour or two, on a lawn, witnessing an exhibition of flowers and vegetables, from which time she has almost continually had cold