whole of the nitrogen will have disappeared under the form of carbonate of ammonia.

You must not forget that the younger the organs of a vegetable are, the more nitrogen it contains; this explains why the upper part of straw is much richer in azote than the lower part. This difference is indicated in our table of equivalents; the upper third (0.33) of the blade contains 13.3 per 1000 of nitrogen; while the lower two-thirds (0.67) contain only 4.1. This important fact, which results from experiments made by myself and M. Boussingault, proves that it is advisable to employ the upper part of the straw only for fodder, and the lower for litter.

On looking at the table you will also see that the straw, or stalks of the leguminosæ (peas, lentils, &c.) is much richer in nitrogen than that of the graminæ (corn, &c.) Every one knows that beans, lentils, &c., are very nutritious. Dwarf peas form the basis of the food of our convicts. The leaves of trees, and particularly those which fall in autumn, contain a good proportion of azote. The different kinds of *fucus*, or sea-weed, which are collected in large quantities along the sea coast, form very excellent manure, especially when mixed with farm-yard dung. For some time back the seeds of the lupin constitute an important branch of commerce in Tuscany; they are sold for five to eight shillings the 200 lbs. The capability of germinating is destroyed by slightly roasting or boiling them in steam. In vine countries the husks of the grape are much employed as manure. Oil cakes, or the residue of the manufacture of oils, by pressure, contain vegetable albumen, gluten, and a small quantity of cellulin. They form an excellent manure, and are the more valuable in proportion as they are freed from oily matter, for oil is a substance unfavorable to vegetation. The cakes should be reduced to powder before being mixed with any other substance. The urine of herbivorous animals, as may be seen in the table, is much richer in nitrogen than their feces; hence, the agriculturist should use every effort to collect so precious a material and not allow it to be wasted, as too many of them do. The quantity of nitrogen contained in the dung of goats and sheep indicates the effect which we may expect from it when mixed with that of the cow, horse, &c., to form the mixed dung of the table.

In alluding to guano a difference has been made between the natural and prepared material; the latter contains 4 per 1000 more of nitrogen, because it has been freed, by sifting, of the vegetable residue and pebbles, &c., with which it is mixed. We know that coal furnishes a certain proportion of carbonate of ammonia, when distilled; this is the reason why coal soot contains more nitrogen than soot derived from the combustion of wood.

Feathers, hair, woollen rags, horn scrapings, &c., contain a very high proportion of nitrogen; but from the tenacity of these materials they are not easily decomposed. Generally speaking their disintegration does not take place before five or six years. Hence, we should chiefly employ them for manuring orchards, vineyards, &c. They follow the progress of vegetation slowly; and if we calculate their slowness of decomposition, their richness in azote, and the quantity required for two acres (*hectare*) of land, we can tell precisely the quantity that is required to obtain, during

six years, the same results as those which would ensue from using annually 10,000 kilos. of common manure. Animal black is obtained by mixing fecal matter with a carbonised earthy powder. It is an excellent manure, and was invented, in 1833, by my associate M. Salmon. The discovery, which resolved two interesting questions, the disinfection of stercoraceous matter, and the production of a manure which might be used without previously undergoing putrefaction, was rewarded with the grand Monthyon prize.

ADDITIONAL

ILLUSTRATIONS OF THE WATER-CURE, AS PRACTISED AT MALVERN.

By CHARLES HASTINGS, M.D., F.G.S.,

Physician to the Worcester Infirmary, and Secretary to the
Provincial Medical and Surgical Association.

In my last communication I related the treatment of a case of gout, and particularly noticed that the patient suffered much from being almost smothered under a bed. This clumsy and semi-barbarous mode of producing perspiration has certainly the merit of novelty. At least, as far as tradition reaches, we know of nothing precisely similar to this, unless, indeed, we suppose that the custom of smothering unfortunate individuals affected with hydrophobia under a bed, as practised in some districts in this kingdom, may be considered in the same light, and may at an early period have been brought into this country from the forests of Germany by some wandering tribes. The Silesian peasant has extended this treatment to many other diseases, and it has been proposed as a mode of treatment in this highly-civilised country, being recommended by the hydropathists as a certain cure for "various ills which flesh is heir to." Fortunately, however, the water-doctors have not quite succeeded in depriving all the patients who fly to them for succour of common sense, and, therefore, this part of the treatment has *staggered*—literally so staggered some of them—that they could not be enchanted by the wand of the magician.

But to be serious. This said mode of producing perspiration, by putting a patient between a bed and a mattress, which is so frequently had recourse to by Priessnitz and his adherents, is a horrid mode of dealing with an invalid; and if one may believe report, not a few English people rebel against this Germanic custom. Not that the heroes who are engaged in these mountebank performances would ever allow this to transpire, but the truth will ooze out and find its way to the world; that some of the Malvern water-doctor's patients have rebelled against this *novel observance* is certain, whilst others have well nigh paid the debt of nature by imprudently persisting in this extraordinary course.

My object at present will be to reveal to your readers some of the secret performances. And first of all, in order that I may not be supposed to set down aught in malice, I will give verbatim an extract of a letter which has happened to fall into my hands, wherein one of the water-doctor's own patients graphically describes the goings-on at this English Graefenburgh, especially in reference to his own personal experience of what may be appropriately called a

bed-scene. The gentleman says—"As for hydropathy as a general specific, it is utter nonsense. Gout and rheumatism are relieved, and some cases of fever it succeeds in, and people of long-standing habitual constipation seem to have benefited; but in asthma, tic, acute diseases, dropsy, apoplexy, or surgical cases, it is of course an utter failure. Good is no doubt done by early hours, exercise, and abstinence, but a cure never or rarely effected. Dr. — is a conceited, impudent, off-hand sort of a person, and he goes about telling everybody of his success and wondrous cures. He states he has cured Lord —, but this I do not believe to be the fact. The general class of patients here are old Indians from Cheltenham, hypochondriacal ladies, and dyspeptics. What is useful in hydropathy will be added to general practice, and then it will follow St. John Long, mustard-seed, and brandy and salt. The system is new, and may perhaps last a year or two.

"On my arrival here I was subjected to the sweating process—four blankets and a feather-bed over me—and in ten minutes I felt giddy, the room ran round, lights came before my eyes, and just before consciousness departed I flew out of bed. Once more I tried it with a similar effect, adding vomiting to all the other disagreeables. Had I had a fit the danger would have been imminent. I therefore gave up all idea of submitting to further mountebank folly. The whole affair is a humbug, as far as its being a universal cure."

I am not acquainted with this gentleman, and have had no opportunity of knowing what the complaint was that called for the administration of this heroic remedy; but be this as it may, the patient, it appears, had complete nausea, and it is very desirable that this gentleman's opinion, derived from personal experience, should be widely disseminated, in order that these mysterious doings should not be kept secret; for, indeed, I fear that in some instances, could the whole truth be made manifest, it is not to be doubted that death would speedily follow the employment of this rude and extraordinary remedy. Whether homicide in such cases is considered in the eye of the law as justifiable, I am not lawyer enough to determine; but it is a point, in all probability, which will not long remain undetermined, should this mode of treatment prevail to any extent, for coroners generally are not negligent people, and should such a case be presented and a legal opinion sought, they will not fail to charge the jury to the effect that it is contrary to the spirit and intention of the law of England that death should thus be brought upon her Majesty's liege subjects by these experimental bed sweatings.

Eliz. Sherwood, aged forty-five, who had been occasionally a patient of the Worcester Infirmary, and had been for a long time complaining of pain in her limbs, between the shoulders, and in the chest, and had also had occasional attacks of difficulty of breathing, would, had she followed out the plan, have fallen a victim to this barbarous treatment. She went to the water-doctor in the month of August, who assured her he could cure her in a fortnight. He commenced the treatment by having the stomach and bowels fomented with hot flannels, and cold wet rollers were put as a bandage around the knees and ancles. Shortly afterwards she was every day put under a

bed prepared in the following manner:—She was first of all enveloped in a blanket, and upon which two others were placed and a coverlet; to the weight of which was superadded a feather bed. Under all of these she lay for two hours and a half, or until a profuse perspiration broke out. She then left the bed, and was put into a bath eighteen inches in depth, and was well rubbed. After this she dressed herself, and walked out, and whilst in exercise drank some cold water. She was ordered to drink nothing but water, or milk and water, and to observe strictly a low regimen.

This plan she followed five weeks, when she became much emaciated and reduced in strength, and, to use her own expression, was ready to die, and all her usual symptoms were aggravated rather than relieved. She, therefore, made up her mind to abandon the course, and to apply for relief to the Worcester Infirmary, where she was admitted on the 1st of October, suffering greatly from weakness and emaciation, and being much affected by difficulty of breathing, and pain in the chest and limbs. She was put upon good diet, and was ordered a blister to her chest. Soothing medicines were given, under which she soon began to improve, and in a month was nearly convalescent.

REMARKS.

This is a notable instance of the application of the smothering and sweating bed-process to a poor, half starved hypochondriacal woman, already brought into a great state of weakness and misery by poverty and wretchedness. No wonder that, after submitting to this exhausting system for five weeks, she should find herself *ready to die*, and dreading what might occur, give up further trial of it. It may further be observed, that the adoption of a very spare diet and active exercise, in a poor, worn down patient, who had for years been scarcely able to get food enough to keep body and soul together, was anything but judicious. No doubt a diet of rice and simple food, together with active exercise in the salubrious air of Malvern, is well calculated to restore the lost tone of stomach of the corpulent alderman or of the country squire, who may have pampered his appetite and stimulated his stomach to enervation, by all the piquant dishes which the art of cookery so well knows how to supply; but to apply this same regimen to the cure of a poor, half-starved patient, seems contrary to all rational treatment. In fact, the event of the case proves the accuracy of these remarks, for no sooner did she get into the infirmary, where she had a more nourishing diet, and was freed from the annoyance resulting from the water applications, than she became much better, and in a month was enabled to return home nearly convalescent.

CAULIFLOWER EXCRESCENCE OF THE ANUS—SCIRRHUS OF THE PANCREAS—CONTRACTION OF THE DUODENUM—HYDATID OF THE BRAIN.

By J. TANNER, Esq., Surgeon, Ledbury.

On Sunday, October 3, 1841, I was sent for, for the first time, to see a well known sportsman, of frugal habits, aged fifty-one, living about eight miles from hence. The following is a brief history of his case:—