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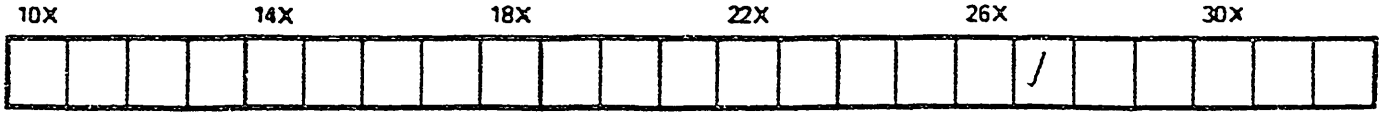

NEWCASTLE FARMER.

VOL. III.—NO. V. COBOURG, JANUARY 1, 1840. THOS. PAGE,—Editor.

From the Albany Cultivator.

HYDROPHOBIA.

Of all the diseases to which the animal creation is liable, there is none, perhaps, so horrible in its manifestation as that called *rabies*—commonly known as hydrophobia. The latter term, however, seems to be in some degree inappropriate, inasmuch as a dread of water is by no means a universal accompaniment of the disease.

Youatt, in his treatise on "*The Dog*," has given the pathology of rabies in a more detailed form than any other author; and as the disease is one of which there is always more or less danger, both to our domestic animals and the human race, it may serve a good purpose to present a brief synopsis of his observations.

In answer to the question, what is the cause of rabies? Mr. Y. says—"It is the saliva of a rabid animal received into a wound or on an abraded surface." Of the nature of the virus he thinks we know but little. "It is not," he says, "been analyzed and it would be difficult to analyze it." It can only be propagated by inoculation—it must be brought in actual contact with the nervous fibre. He is of opinion that it never arises spontaneously, and he thinks if a quarantine of eight months could be established, and every dog confined separately for that length of time, the disease would be completely annihilated.

After the poison of a rabid animal has been communicated to another, it lies dormant for a while—the length of time varying with different animals. In the human subject the disease usually manifests itself in from three weeks to six or seven months; in the dog not less than fourteen days, and generally from five to six weeks—in three months from the time of being bitten, the dog would be considered safe. In man it usually runs its course in twenty-four hours—rarely exceeding seventy-two hours; in the horse it runs three or four days; in the sheep and ox five to seven days; in the dog four to six.

The disease has been communicated, either by the bite of a rabid animal, or by inoculation with the virus, to almost all kinds of animals; and in all it was accompanied by the same or similar characteristics. The strange and uncontrollable disposition to bite is generally manifested, even in rabbits, sheep, and in the human race. By way of experiment, two physicians inoculated fowls with the foam taken from the mouth of a rabid cow, and after about ten weeks, the birds died with evident symptoms of rabies.

Means of prevention.—Excision of the bitten or exposed part has been frequently resorted to, and with various success—the operation is thought to demand great skill, owing to the difficulty of taking out the affected part without bringing the virus in contact with the fresh-cut tissue. Cauterization, burning the bitten part with a hot iron,) has been practiced with little advantage. The application of caustic—*lunar caustic*—has on the whole proved best. "It is," says Mr. Youatt, perfectly manageable, and being sharpened to a point, may be applied with certainty to every recess and sinuosity of the wound. If the whole of the wound has been exposed to its action, an insoluble compound of animal fibre and the metallic salt is produced, in which the virus is wrapped up, and from which it cannot be separated. In a short time the dead matter sloughs away, and the virus is thrown off with it." He recommends applying the caustic a second time, but more lightly after the eschar has sloughed off, in order to destroy any part that may not have been properly acted on by the first operation.

Mr. Youatt states that he was several times bitten by rabid dogs; but that by a timely application of lunar caustic, he escaped; "and yet often," says he, "when I have been over fatigued, or a little out of temper, some of the old sores have itched and throbbed, and actually become red and swollen." He was once bitten in a very dangerous manner by a rabid cat. This animal is generally very ferocious when laboring under rabies, though, fortunately, it is but seldom that it is thus affected. During its paroxysms, its rage knows no bounds. In the case alluded to, the cat had been the plaything of the children of the family, but had, all at once, become sullen and ill tempered. It got into an upper room where it was allowed to remain, and Mr. Youatt was sent for. He gives the following thrilling account of the scene which ensued:

"It was nearly dark when I went. I saw the horrible glare of her eyes, but I could not see so much of her as I wished, and I said I would call again in the morning. I found the patient, on the following day, precisely in the same situation and the same attitude, crouched up in a corner and ready to spring. I was very much interested in the case, and as I wanted to study the countenance of this demon, for she looked like one, I was foolishly, inexcusably imprudent. I went on my hands and knees, and brought my face nearly on a level with hers, and gazed on those glaring eyes and that horrible countenance until I seemed to feel the deathly influence of a spell stealing over me. I was not afraid, but every mental and bodily power seemed in a manner suspended. My countenance, perhaps alarmed her, for she sprang on me, fastened herself on my face, and bit through both my lips. She then darted down stairs, and I believe was never seen again. I always have nitrate of silver in my pocket, even now I am never without it. I washed myself, and applied the caustic with some severity to the wound; and my medical adviser and valued friend furnished still more after I got home. My object was attained, although at somewhat too much cost, for the expression of that brute's countenance will never be forgotten."

Mr. Youatt very severely censures the practice indulged in by many persons, of allowing dogs to lick their hands and face. He says the habit is a very dangerous one, and relates a case of a lady having lost her life by suffering her dog to lick a pimple on her chin. Horses have also taken the disease from dogs licking their muzzles, which were scratched or chafed.

The following extracts from Mr. Youatt's description of the symptoms of rabies, may prove useful in preventing the consequences of this dreadful malady.

"The early symptoms of rabies in the dog, are occasionally very obscure, In the greater number of cases these are sullenness, fidgetiness, and continual shifting of posture. Where I have had opportunity, I have generally found these circumstances in regular succession. For several consecutive hours, perhaps, he retreats to his basket or his bed. He shows no disposition to bite, and he answers the call upon him laggardly. He is curled up, and his face is buried between his paws and his breast. At length he begins to be fidgety. He searches out new resting-places; but he very soon changes them for others. He takes again to his own bed, but he is continually shifting his posture. He begins to gaze strangely about him as he lies on his bed. His countenance is cloudy and suspicious. He comes to one and another of the family, and he fixes on them a steadfast gaze, as if he would read their very thoughts. 'I feel strangely ill,' he seems to say: 'have you anything to do with it? or you? or you?'" Has not a dog mind enough for this? If we have observed a rabid dog at

the commencement of the disease, we have seen this to the very life.

"A peculiar delirium is an early symptom, and one that will never deceive. A young man was bitten by one of his dogs; I was requested to meet a medical gentleman on the subject. I was a little behind my time; as I entered the room, I found the dog eagerly devouring a pan of sopped bread. 'There is no madness here,' said the gentleman. He had scarcely spoken when the dog quitted the sop, and with a furious bark sprung against the wall as if he would seize some imaginary object that he fancied was there. 'Did you see that?' was my reply. 'What do you think of it?' 'I see nothing in it,' was his retort; 'the dog heard some noise on the other side of the wall.' At my serious urging, however, he consented to excise the part. I procured a poor worthless cur and got him bitten by this dog, and carried the disease from this dog to a third victim; they all became rabid one after another, and there my experiment ended. The serious matter under consideration, perhaps, justified me in doing as I did.

"This kind of delirium is of frequent occurrence in the human patient. The account given by Dr. Bardsley of one of his patients, is very appropriate to our present purpose:—'I observed that he frequently fixed his eyes with horror and affright on some ideal object, and then with a sudden and violent emotion, buried his head beneath the bed-clothes. The next time I saw him repeat this action, I was induced to inquire into the cause of his terror. He asked whether I had not heard howlings and scratchings. On being answered in the negative, he suddenly threw himself on his knees, extending his arms in a defensive posture, and forcibly threw back his head and body; the muscles of his face were agitated by various spasmodic contractions; his eye-balls glared, and seemed ready to start from their sockets; and at that moment, when crying out in an agonizing tone, 'Do you see that black dog?' his countenance and attitude exhibited the most dreadful picture of complicated horror, distress and rage, that words can describe or imagination paint.'

"There is also in the human being, a peculiarity in this delirium which seems to distinguish it from every other kind of mental aberration. 'The patient,' in Mr. Lawrence's language, 'is pursued by a thousand phantoms that intrude themselves upon his mind; he holds conversation with imaginary persons; he fancies himself surrounded with difficulties, and in the greatest distress. These thoughts seem to pass through his mind with wonderful rapidity, and to keep him in a state of the greatest distress unless he is quickly spoken to, or addressed by his name, and then in a moment the charm is broken; every phantom of imagination disappears, and at once he begins to talk as calmly and collectedly as in perfect health?'

"So it is with the dog, whether he is watching the motes *that are floating in the air, or the insects that are annoying* him on the walls, or the foes that he fancies are threatening him on every side—one word recalls him in a moment. Dispersed by the magic influence of his master's voice, every object of terror disappears, and he crawls towards him with the same peculiar expressions of attachment that used to characterize him. Then comes a moment's pause—a moment of actual vacuity—the eye slowly closes, the head droops, and he seems as if his fore feet were giving way and he would fall: but he springs up again; every object of terror once more surrounds him—he gazes wildly around—he snaps—he barks, and he rushes to the extent of his chain, prepared to meet his imaginary foe.

"The expression of the countenance of the dog undergoes a considerable change, principally depending on the previous disposition of the animal. If he was naturally of an affectionate disposition, there will be an anxious, inquiring countenance, eloquent beyond the power of resisting its influence. It is made up of strange suppositions as to the nature of the depressions of mind under which he labors, mingled with some passing doubts, and they are but passing, as to the concern which the master has in the affair; but most of all, there is an affectionate and confiding appeal for relief. At the same time we observe some strange fancy, evidently passing through his mind, unalloyed, however, by the slightest portion of ferocity.

"In the countenance of the naturally savage brute, or him that has been trained to be savage, there is, indeed a fearful change; sometimes the conjunctiva is highly injected; at other times it is scarcely affected, but the eyes have an unusually bright and dazzling appearance. They are like two balls of fire, and there is a peculiar transparency of the hyaloid membrane, or injection of that of the retina.

"A very early symptom of rabies in the dog, is an extreme degree of restlessness. Frequently he is wandering about, shifting from corner to corner, or continually rising up and lying down, changing his posture in every possible way, disposing of his bed with his paws, shaking it with his mouth, bringing it to a heap, on which he carefully lays his chest or rather the pit of his stomach, and then rising up and bundling every portion of it out of the kennel. If he is put into a closed basket, he will not be still for an instant, but turn round and round without ceasing. If he is at liberty, he will seem to imagine that something is lost, and he will eagerly search round the room, and particularly every corner of it, with strange violence and indecision."

NOTES ON INSECTS INJURIOUS TO VEGETATION

THAT HAVE APPEARED IN BERWICKSHIRE DURING 1848.

Sitona lineata—One of the most hurtful insects during the season was Sitona lineata, one of the weevils or Curculionidæ. It survived the winter, and the mild and the mild and dry spring favoured it greatly, so that it appeared in immense numbers. It frequents the Leguminosæ, and caused great damage to late-sown Beans, Peas, and Tares, by eating the young leaves before the rains came and enabled the plants to throw out additional foliage to repair the damage occasioned by the loss of the organs that supplied their earliest sustenance. In the gardens many of the crops of Peas had to be sown a second time. Sometimes five or six individuals were found on a single plant. In cold weather they hid themselves beneath the clods and stones, but a hot day put the whole race in a ferment; and they might then be seen crawling over the fields in all directions. The farmers imputed the effects to slugs, but the Sitonæ were the real depredators. Their attacks are not limited to the spring, but the insects go on increasing in numbers till the crops are cut. The luxuriance of the plants prevents their presence, at a later period, from being felt; but where the crop is poor, it often suffers in being deprived of the support of the foliage, which they have devoured or shattered. I am inclined to believe that this is not the only damage they inflict, but that the worm so injurious to the Pea crop, while in the pod, is their larva. In this district we have no Bruchi to which this can be attributed. I observe that the seeds of the Furze are destroyed in a similar manner by large larvæ, *which I consider to belong to S. regensteinensis, S. sulcifrous,* and S. hispidula, species that frequent that shrub. Oxystoma ulicis, a much more minute insect, with a long thin snout, also attacks the seeds of the Furze in its larva state, and is reared within the pod; but these larvæ are too large to be assigned to it. Towards the latter part of the season, the Sitona was joined by the Aphis ulmariæ or Viciæ, as it is sometimes called, in considerable numbers, a plump, green, or pink coloured species, almost exclusively attached to the Leguminosæ. But the Sitona was still the principal assailant.

It is an insect less than a grain of Oats, broader behind than in front, and gradually narrower from the thorax forward.—It is sandy-coloured or fuscous above, with some silvery or coppery tinted scales intermixed; the throat, the sides of the breast, and the belly beneath, are thickly covered with whitish or ashy grey scales. The head, but for the eyes, would be an irregular oblong; the eyes are rather large and projecting; before them the head is produced into a short snout, which narrows a little anteriorly, and is cut across obtusely, so as to leave the tip still broad; a furrow runs down the centre of the head, and the nose at its tip is slightly cut out. The scales on the head are rather more coppery on the crown, near the margins of the eyes, and at the tip of the rostrum. The an-

tennæ spring from near the apex of the snout, and are of considerable length; when at rest they lie along an oblique groove, situated before the eyes, into which part of the basal joint fits. The first joint is thin and club-shaped, and the rest of the joints are given off from it, in the manner of an elbow; they are short, and taken together, are longer the basal one; the external ones form a longish cone-shaped club; their colour is reddish. The thorax is not much broader than the hind part of the head, and it ssides are rounded; it is slightly contracted behind, but not so much as in front; there is a narrowish stripe down its centre, and two other broader arched bands on the sides, whose colour is whitish, or they are ornamented with brownish coppery shining scales. The base of the elytra is considerably broader than the thorax, and their entire shape is that of an elongated cone, being gradually narrowed at the apex, which is obtuse, and slightly rounded; they are considerably convex above, and are nearly uniformly fuscous, or sandy-coloured, punctate striate, with a stripe at the base of the suture, and one on each shoulder, whitish or coppery.—The thighs are dusky and scaly nearly like the rest of the body, their lips being rusty; the shanks are rusty red, and the joints of the feet are rather dusky; the third joint consists of two strong lobes, which lie something like a V; and the next apparent joint lying between these, is linear, and is terminated by two hooked claws. These joints confer a considerable power in grasping objects.

Provincially these insects are called "cuddies," *i. e.* asses, their colour, and a certain remote resemblance, having provoked popular comparison. They usually survive the winter in moss, within the shelter of stone walls, or in the hay or corn ricks; and in the first genial days of spring, they may be seen issuing forth, and ascending stone walls, and other eminences, in which they evince great perseverance, and appear to have considerable enjoyment, as place them as low as possible, they still show a propensity to mount upwards. This rambling *penchant* enables the Sitona to compensate for their sometimes imperfect wings (although these are often complete, and sufficient for purposes of transport), and it is their habit whenever met by a gust of wind, to allow themselves to be carried onwards by it. Owing to this we find this species, along with others, assembled in vast numbers in spring upon sandy sea coasts, the wind having drifted them into the hollows whence they attempt to rise by struggling up, with long-continued toil, and often fruitless effort, the slippery ascent of the sand-banks. At the close of evening they seek shelter under rubbish, heaps of sea-weed, or whatever immediate covert is offered; there most of the insects seen in this condition probably perish, and the fields are thus freed from a part of their last year's ravagers. The insects may be taken in great numbers by the sweeping net, though from their habit, when disturbed, of dropping in a pretended lifeless state, this may miss as many as it takes; *James Hardy, Penmanshiel, by Cockburnspath, Berwickshire, Oct.* 23.

PRODUCTION OF FUNGI.

Dr. Barry, is the Edinburgh new Philosophical Journal for October, 1843, page 219, asks the question—"How do vegetable productions arise in the infusions of organic matter? I venture to believe," he adds, "that they may have their origin in those particles which I have called the true cell germs. These cell germs, as part of the animal or vegetable organisms, for instance in the elaborated *liquor sanguinis* or the descending sap, would have been developed according to the stimulus received within that organism; but now set free, each becomes developed into an indeeendent organism capable of propagating itself and producing a like form, which it does in a variety of ways;" and he adds, "It is known that the various organisms and even organs have their peculiar parasites; and if the view just mentioned be admitted, this is no other than what we should expect from specific peculiarities of the organisms." Again, Mr. Carpenter expresses an opinion that fungi may be produced by the degeneration of the tissue of plants more elevated in the scale. The two following experiments seem to throw some light on this abstruse subject, and show that the views of Dr. Barry and Mr. Carpenter come in some degree near to, though they do not quite express the manner in which fungi are formed. The first experiment shows the forms of the tissue of a plant when nearly separated from each other, the second experiment points out the manner in which parasitic fungi are formed. 1*st Experiment.*—Having taken a fresh leaf from a green and vigorous

Potato plant, I placed the end of the petiole in a little caustic ammonia, in a watch glass, and having covered it with a glass jar, allowed it to remain in this position for three days. In the course of that time the ammonia had extracted a greenish fluid from the petiole and leaf, the latter of which had by this time fallen down, so that part of the leaf was also in contact with the ammonia. On removing the leaf, I found in the watch-glass, in addition to the greenish liquid, a quantity of the tissue of the plant, which had mostly separated into individual cells, although a few of them still remained united together. When the ammonia had nearly evaporated, the greenish liquid assumed a thickish appearance, like gum, having in it the separated tissue of the plant. 2*d Experiment.*—Having taken a piece of vegetable substance of about 1-16th of an inch square, which I had cut out of a green and fresh plant, I placed it betwixt two transparent bodies, after which it was folded in paper, and being subjected to gentle pressure, was allowed to remain there undisturbed, for some months. At the end of that time, the piece of greenish vegetable substance was found to be surrounded at its edges with a white mouldiness, consisting in some places of long, slender, white threads, and at other places having the fibres matted together as in the annexed figure, while small bodies like the fructification of fungi appeared here and there through the mass. On examining this substance with a compound microscope, I found that at its base, where it began to rise up, or separate from the body out of which it grew, it was formed like to the tissue found in the greenish liquid referred to in the first experiment. Having again examined this mouldiness more minutely, I found it was produced by what I may term an exfoliation* of the tissue of the plant. I was able by the microscope to trace the tissue exfoliating and elongating into long, slender, white threads, having here and there through it a few cells adhering together, which the threads had carried along with them, the structure of the whole mass showing the fungous thready substance to be an elongation and modification of the tissue of the plant. If these views be correct, we may see how fungi may be produced by any cause either external or internal, visible or invisible, which produces an abnormal structure, or morbid condition of a plant, and sets the tissue in part free. Again, having added a drop of rain water to the dried gummy matter mentioned in the first experiment, the colour of it nearly disappeared, the tissue becoming almost transparent. As the water evaporated, the greenish colour returned again, giving a striking, and probably true representation of the manner in which much of the greenish slimy matter is formed and becomes visible, which is found at the bottom of any vessel in which water has been kept for a considerable time. Lastly, the foregoing remarks may be the means of suggesting new modes of manipulation to those who are interested in the subject, and who are searching into the origin of parasitic fungi.—*Observator, Elgin.*

* I use the term exfoliation in reference to the exfoliating of the bark of a Birch tree, as it seems to me to convey more distinctly than any other term I can use, the manner in which the tissue seems to rise up, although it is not altogether correct.

CHEAP MANURING.

The farmer well knows that the art of economical manuring does not consist in using the lowest priced dressing, in the smallest quantities; but little farmers are not always aware of what it does consist in: namely, in appropriating the dressing to the course and crop, so that each crop shall have just what it wants, and not that which better suits another product. We must feed our plants as we would our animals, with

what nourishes them best. Give your dog bones, and your cow Clover; not waste bones upon your cow, and Clover upon your dog. So if you are dressing for Wheat give it what Wheat requires, and for Mangold Wurzel or Carrots, vary the dressing accordingly.

Now it is just in learning what each plant requires, that the art of manuring has made the greatest progress of late years. And this I must first endeavour to make clear to the class of farmers for whom I am writing. To know how to feed up our plants, so as to get the heaviest produce, we must first know what they consist of. If we burn a handful of Wheat (or any other vegetable) we have, first flames; and when this is burnt out, there remains a skeleton of charcoal; and if we keep this red hot in the air, the charcoal itself burns away and ashes only remain; but these are fire proof, and may be kept red hot for hours without loss. Thus the Wheat seems to have been first reduced to flame and charcoal, and at last to ashes, the charcoal also having burnt away into the air. The quantity of ashes is very small, not perhaps two hundredths of the plant burnt. But all the burnt part dissolves in the air, from which plants can get it again; while the small quantity of ashes will not dissolve in the air, and the plant can get them only from the soil. But they are quite essential to the plants thriving, though in such small quantity; and it is chiefly in the proper supply of this small quantity, that lies the art of Cheap Manuring. The combustible ingredients are, as will be immediately shown, the same in all plants; but the incombustible ashes differ between one and another, so that whilst they cost little and are easily portable, it is of the first importance that each crop and course should have its right supply, as well in proportion as in quantity. It is right however that the farmer should have plain notions of the nature and distinctions of all these ingredients.

Although the combustible ingredients constitute the bulk of the plant (the ashes averaging not more than two hundredth parts of it, as before said,) yet they are the less numerous, consisting of only four in all, named Hydrogen, Carbon, Oxygen, and Nitrogen. The flame, which first appears, is due to the hydrogen, or inflammable air; the charcoal is called in chemistry carbon; and the other two, oxygen and nitrogen, are the ingredients of the air we breathe. Of these, oxygen may be called the spirit of the air; as it alone supports our breathing and the burning of our fire and candles. Although it is only one-fifth of the air (the other four-fifths being nitrogen) yet if we extract the oxygen, a candle can no more burn, nor a man breathe, in the nitrogen, than under water. Thus, then, we have carbon the charcoal; hydrogen the inflammable air; oxygen not inflammable itself, but the necessary supporter fire and of animal breathing; and nitrogen, which will neither burn itself, nor suffer anything else to burn or breathe in it; and which seems to be mixed in the air (like water with brandy,) because the oxygen alone would render fire as to be unmanageable, and would inflame our blood in breathing it. Yet it will be seen, by and bye, that this inert nityogen plays a very active part in exciting vegetation.

It must be added that these substances combine one with another, producing compounds of great interest in the growth of plants. Carbon, is burning, unites with the oxygen of the air, forming carbonic acid; which spreads throuth the air and gives back its carbon to the leaves of the plants. Hydrogen in burning, also unites with oxygen, and forms water; falling upon the plants in rain and dew. And nitrogen, though it will not burn, can yet unite with oxygen by other means, forming nitric acid; or with hydrogen to form ammonia; both of great importance in cheap manuring. But whilst the constituents of the bulk of the plant are only four in number; those of the little residue of the ashes number no less than 11.

2 alkalies, Potass and Soda;
2 alkaline earths, Lime and Magnesia; all which are pretty well known to the farmer, the magnesia chiefly as a medicine;
3 acid, Sulphuric, or vitriol; muriatic, or spirits of salt; and Phosphoric, the acid of bones;
2 earths—Silica, fine sand or flint; *Alumina, the soft element of clay;*
And 2 metals, Iron and, Manganese.

These also generally exist in the soil in combination with each other. The acids are sour; the alkalies and lime nauseous and biting; but having the power of neutralising the acids, and allaying the sharpness of both. Thus muriatic acid and soda, either of which would take the skin off our tongue, united from common salt; sulphuric acid, still more destructive than muriatic, forms with magnesia, Epsom salt—disagreeable enough, but not dangerous; and phosphoric acid, also sharper than muriatic, forms with lime, the insipid white earth of bones. Silica constitutes the fine sandy part of most soils; and their clayey portion consists of silica combined with alumina. Iron and magnesia are united with oxygen, as earthly powders, whenever found in the ashes of plants, or in the soil.

We will conclude this with the remarks, that whilst the number of these incombustible ingredients is so great, their quantity in the plant is small (as before observed,) and their influence upon its growth and products important and characteristic

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From the Farmers' Herald.

LIQUID DRAINAGE OF FARM YARDS.

I am frequently asked, "How does it happen that so little good results from the application of the drainage of my fold yard?" I put up a tank at a great cost—I laid long drains—I get it full over and over again, till the carting of it away is an intolerable nuisance—a fearful labour, and it seems to do but little good. Do you lay it on in winter when it is made? Yes. Why then the rains wash it away down your drains. Yes, but when I apply it in summer it is no better! *Just because the sun evaporates its volatile particles.* Aye, and so you have arrived at my conclusion, it does no good—liquid manure is all a farce! Go in, my friend, to tea—mash it—pour boiling water upon it, one libation after another, and when a great deal of its *useless colouring matter* goes off, then make your tea—you have all the leaves—the first few cups "are all a farce." And is it not common sense, that after *one rain after another has taken off the soluble parts of your* manure—the best parts, mind—those the plants *need, and at once*—the manure is *injured.* You, my friend, have got the bones to pick after the gutter has got the beef; preserving most carefully the chaff, after the mice and rats have run away with the corn.

The whole of this is a great paradox! Let us examine the steadings—the buildings—cattle fed on cake, *good for manure* this—horse and cattle litter well mixed—plenty of pigs rooting it over—no fault any where, that you see, here.—Strange! But stop, you have a great area of buildings, and you have no spouts; all the extent of your fold yard, and all the eves of your buildings, are pouring upon your unfortunate manure, and the liquid is taking away its parts indeed, but taking them with so few grains to a gallon of water, *that the* land must be deluged with water to get a hundred weight on an acre. The carting of all this water is an immence labour—it stains the land more than it benefits it—it flows off without being absorbed—it is so diluted, that looking for its good effects, is like looking for a "needle in a bottle of hay.', My friends, you are carting away—wasting horse flesh, and human labour, and doing no good, only distributing *coloured water.*

But what can we do?

Spout your buildings. Mr. Baker recommends covering the farm-yards, and this is a very expensive, but an excellent plan, both for stock and manure. Mr. Warne's boxes are a *perfect remedy for the evil;* but in the absence of this, the best must be made of a "bad job.,' Then don't scatter the water to the winds and the sun, and the washings of rain, unless you can irrigate a field—allow it to deluge it for twenty-four hours; if not, make an absorbent mixture—collect hedge backs, road scrapings, decayed weeds, leaves, or any refuse matter, either on the farm or the neighbourhood, and saturate *these with it time after time, and* a compost will be made worth double its bulk of your farm-yard manure.—*M. M. Milburn, land agent, Thrisk.*

APPLICATION OF MANURES.

In the present mode of bringing manures in contact with the soil, the two substances lie in masses of greater or less magnitude; and when the aggregations are pulverized and comminuted, they still lie separate, and the exterior surfaces are the only parts that come in cotact. This application is against the fixed law of chymistry, that bodies must be in a very finely reduced state, and be opposed to each other at insensible distances, or no reciprocal action can take place, and consequently no combinations or dissolutions will ensue.—And hence when farm-yard dung is laid into drills in the form of lumps and masses, or is ploughed broadcast into the land, the pulverized soil comes into contact *only* with the exterior surface, and can derive no benefit from the interior parts that are removed from action. And, further, the growing plants are benefited *only* by the reciprocal action of the substances of which the manure is composed, without any assistance from the soil in combination.

These reflections arise from the common mode of applying manures, and of the chymical notions of the reciprocal actions of bodies. Dissolution of bodies takes place in consequence of different electrical states, and may be altered and modified by many necessary and contingent circumstances. Chymists are at present occupied in relating the constituents of manures and of the plants that are produced—which is wholly useless; for the certainty is known that substances that are applied as manures do not pass unaltered into plants, andbecome the same substance in the constitution of the vegetable. Animals and vegetables supply themselves with the necessary elements from different food by some process of organic actions, of which we may remain for ever ignorant.

The object of chymistry should be to investigate and explain the relative actions of bodies on each other, and the results of the combinations and dissolutions. The bare knowledge of constituent elements leads to no useful practice, and without that essential result accessory science is a mere nullity.—*J. D.*

Agriculturists (whether justly or unjustly) have the credit of being loud and continuous in complaint. It is said of them, even as regards the weather, that it is always either too hot or too cold, too wet or too dry. Now we are not disposed (if it be so) to countenance such a feeling, but merely to request parties who bring this accusition against the farmers, to ask themselve how far they are quite sure, if they were alike circumstanced, they would be a whit more contented and happy. It is a very easy matter for a citizen, who can cover all he has affected by the weather by putting up his umbrella, or putting on an extra coat, to be wondrously grateful; but it is a far different thing for a man whose entire stock and crop—nay, all that he has in the world, is continually at the mercy of the seasons. We have been induced to preface our monthly report with this remark, becaus at the present juncture we could not give a faithful report of our rural concerns without referring to the extraordinary (we might say almost overwhelming) difficulties of the farmers from the extreme wet weather with which it has pleased Divine Providence to visit us. *We write not in the language of complaint, still* less are we disposed to call in question the arrangements of that allwise Being who has the clouds at his command. It may be, and doubtless is, for the best; it is not less true, however, that for the present it is a great calamity. A more perplexing season to the farmer from first to nearly last of 1848 we have rarely known. The months of February, March, and April were rainy almost without intermission; May set in dry, nearly without a shower, so that it was impossible to put in some of the spring corn with any reasonable prospect of a crop. Much of the latter sown seed never vegetated till June, while some could not be sown till then, so that here and there considerable patches of oats and barley are to be seen on the southern side of the country, still lying in the fields completely satarated with the rains of the last month, till they have become nearly worthless, except to cart into the farm-yard for manure. The passers-by may and would probably say, "This is an afternoon slovenly farmer. But our own opinion is, that does not follow. The farmer had no power to command vegetation, and in nine years out of ten we have weather in the early part of October that would have enabled him to harvest his crop. The wheat seeding has progressed most tardily, and from the same cause (over-much rain.) On the driest land it has been got in with extreme difficulty, except that sown before Old Michaelmas.—We apprehend not half the wheat in the country is yet planted, On the heavier soils very little; and very much land must stand over till the spring, unless, indeed, we should get an early sharp frost, followed by fine weather, towards the end of this month, which, by the bye, is very improbable.—With mangold-wurtzel the farmer has no alternative but to put it into heaps on the land and leave it there for the first frost, the farm roads and gate away on the heavier soil being at present impassable. The meadows and low lands have been inundated nearly the whole month. Added to these calamities of the season, there has been far greater mortality than usual among the stock, more especially the sheep; far even where the distressing and disheartening small pox has not shewn itself, the young sheep have been very unhealthy, and great losses have been sustained—to say nothing of the sore mouth and lameness, a disease more found on most farms. Nor is the grazier faring much better in stock; perhaps he is the greater sufferer; and we fear his bills from Smithfield bringing him home something less than 6d. per lb. for beasts, which cost him nearly all the money they make, will not fill his pocket very fast. If, then we take an honest view of the present position of our agriculture, it will be impossible to deny that our farmers are entering upon the coming winter with most disheartening prospects. Taken altogether the harvest is below an average crop, and that crop, in many instances, got in poor condition, much of the straw totally unfit for fodder; the hay, one fully moiety greatly damaged; grain of all descriptions under a remunerating price; while taxes, and rates, and pauperism, are gaining upon us every quarter.

It has been no less truly than beautifully said, that "there is a silver lining to every cloud," and notwithstanding the weather has lately been most unfavourable for agricultural prusuits, we do well to trust in the promise that "seed time and harvest shall never fail." The unusually fine weather the latter part of September induced the majority of farmers to skim, scuffle, and lay open their fields in the hope of thoroughly cleaning and preparing them for the autumn planting, but the sudden change of the weather checked these operations, and, as little ploughing was completed, the wheat lands are in a most sad and unfavourable state to receive the seed. This suspension of field work has enabled the farmers to thrash out a considerable quantity of grain, and the markets have been freely supplied of late, so much so, that many of the millers are full of stock. The late high floods have stopped the working of the corn mills, and done immense damage to the Swedish turnips and wheat lands contiguous to the swollen streams. Many hay and corn ricks sustained great *damage, and some have required moving to prevent fermentation.* The favourite wheats for this season's planting are Fullard's red, Albert red, and red chrster. The Spaldings, whether the common variety or the Britannia, are getting into disrepute. It is a prolific wheat—hardy, and well adapted for clay soils—but it is not a favourite with the millers. The creeping wheat continues to bear away the prizes at the agricultural exhibitions, and is much grown in Herefordshire and parts of Worcestershire. The young seeds are remarkably luxuriant, and carry a considerable quantity of stock.—The pastures are tolerably full of keep, and should the weather continue open, most of the stock will do well upon them through the present month. Many of the flocks are suffering from lameness, and the disease is even now more general than it has been for many years. The cattle are at present doing well, and there are a considerable number of half-meated beasts for stall feeding, vastly more than at the

corresponding period of last year. The greater proportion of the potatoes are now dug up and secured; the white varieties are the soundest, and will keep the longest, the blues are more or less injured. Dr. Lindley has addressed a circular to many of the agriculturists in this and other countries, hoping, by an accumulation of exact evidence, to arrive at a knowledge of the certain mode of arresting an evil like the potato disease; the returns may probably throw some light upon the subject, although, as the Doctor justly observes, they may fail to elucidate the cause. The Swedish turnips are good, but the common are small, and will yield but indifferently. Rye and winter barley are coming up strong and well.—H. in *Worcester Herald.*

From the Mark Lane Express.

WHICH IS THE MOST PROFITABLE BREED OF SHEEP?

BY J. C., LONG SUTTON.

Which is the most profitable breed of sheep, is a question often proposed—never solved. Many are the reasons given for preference of certain breeds on behalf of different localities, and many experiments have been tried to test relative merits. These have been principally tried on equality of terms, the natural habits of the animals being left out of sight, so that the results have been pretty equally varied and unsatisfactory; no sound conclusion having as yet been arrived at. It is a subject of great interest in itself, and certainly one of vast importance to a country so thickly populated as our own happy land.

The attention of most of our enterprising and energetic Agriculturists has been turned to the increased productions of our arable fields; this is perfectly right, and no one appreciates more highly the great advances made than myself. I am also well aware of the intimate connexion between the two, from the increase of animal food on these arable lands; they must go hand in hand to a great extent; but if it can be shewn that certain animals—a particular breed of sheep, for instance—will produce a more abundant supply of food for man, or clothing for his use, *then that* is the very breed deserving most encouragement, despite of favoured prejudices. I presume not to direct; my object is to promote inquiry. I farm in a district altogether enclosed, and our fields are for the most part of convenient size. Our sheep graze undisturbed; where they feed, there they lie down, and rest in quiet. It is not so with the open field or Down Farmer; his sheep travel from field to down, from down to field daily. This requires activity; he requires an animal with light, elastic tread. I say nothing of this mode of farming! Query: What is the loss sustained in fat and muscle by this weary travel? The mountain range appears to require an agile, hardy animal, but have the little animals generally found on these summits undergone all improvement of which they are capable? The bleak and elevated parts of the High Peak of Derbyshire are grazed by sheep of fair size and proportions; and the Cotswold Hills, which are about 700 feet above 'sea level,' boast the largest sheep in the world. I by no means question the propriety of suiting the animal to the locality or purpose required; but I do seriously object to grazing inferior animals on any pasture, country, or place, where a superior can be introduced: to this I desire to direct particular attention, as a subject of no minor importance. I hesitate to give an opinion, but as I occasionally see sheep of every variety, from the little mountain sheep to the gigantic Cotswold, fattening on our best pastures, I will say that, so far as my observation and experience go, they fatten in about the same time; indeed, with animals of the same age, the larger one generally improves the faster. He is more indisposed to exertion, resting more quietly; and in the consumption of food, the balance is not much in favour of the smaller animal; his active habits cause him to eat more, and his restless feet destroy much. I need not stay to prove that an active, lively animal will consume more food than a quiet, docile one; it is an axiom. My impression further is, that the *little* active one will consume and waste (by treading) as much or even more food than the *large* quiet, docile one; and I invariably find the larger animal to be the quieter one. My own prepossession is in favor of a large breed of animals, as believing that they come to—*grow to*—a heavier weight in the shortest time, upon proportionably the least food. With the view of exciting discussion on these points, and consequent improvement, I send you the following dimensions of sheep taken at the late York meeting.. I withhold the numbers, at least for the present, as I have no wish to come into collision with individual exhibitors. The whole were fairly and carefully taken before the prizes were declared, and in utter ignorance as to whom each animal belonged. I would further say, that I had ample time to make my selection, which, with two or three exceptions, were the largest sheep in each class.

ADMEASUREMENT OF SHEEP IN CLASS AT YORK MEETING, TAKEN BEFORE THE PRIZES WERE DECLARED;—

Breed.	Class.	Age.	Girth.	Length.	Height.
		months.	ft. in.	ft. in.	ft. in.
Long-wools.	No. 1.	16	5 1	3 8¼	2 6½
		16	4 8½	3 6	2 6
		16	4 9½	3 7	2 6
		16	4 8	3 7½	2 5½
	No. 2.	40	5 7	4 0½	2 9½
		52	5 7¾	4 1½	2 8½
		23	5 4	3 11	2 7½
		16½	4 4	3 6½	2 5½
	No. 1.	15	4 2	3 5	2 4½
		16	4 6½	3 5½	2 5
		14	4 6½	3 7½	2 6¾
		16	4 4½	3 6½	2 5
		16	4 5½	3 7	2 6
		16	4 2	3 4½	2 4½
Leicesters.		27	5 3½	3 9	2 5½
		39	4 11	3 9	2 5½
		40	4 11	3 7	2 6½
	No. 2.	55	5 1½	3 8½	2 6
		27	4 8½	3 8½	2 5½
		28	4 9	3 6½	2 3½
		28	5 1	3 9	2 6½
		28	5 0	3 6½	2 7
	No. 1.	16	3 10	3 10	2 2½
		16	3 3½	3 7½	2 2½
		16	4 1	3 7	2 3½
		16	4 0	3 9	2 3
Southdowns.	No. 2.	55	4 5	3 11	2 3½
		29	4 0	3 9	2 3
		29	4 6	4 1	2 4
		40	4 1	3 9	2 2½

I give you my estimate of the comparative weight of the heaviest sheep in each class of same age, according to my judgment:—

Breed.	Class.	Age.	Weight per quarter.	Wool.
		months.	lbs.	lbs.
Long wools.	No. 1	16	52	14
Leicesters.	" 1	16	46	11
Southdowns.	" 1	16	36	8
Long wools.	" 2	40	72	15
Leicesters.	" 2	40	56	12
Southdowns.	" 2	40	46	8

With all deference I beg to say, that in the Leicester classes nearly every variety of Leicesters and long-wools was to be found; the pure Leicesters not predominating, and the long-wool classed embraced a very superior Cheviot, &c.

From the Gardeners' Chronicle.

If experience of the last few years has taught us one thing more certainly than another, it is the unfailing excellence of Guano for every kind of crop *which requires manure.* We do not, however, include in this opinion Saldanha Bay Guano, or any other imported kind except the Peruvian and Bolivian. The former is never good, and is often bad, or worthless; the latter, if undamaged, is of such uniform quality that, practically speaking, one cargo may be taken to be the same as any other cargo; and the high character of the importers secures the public completely against fraud, if it is obtained directly from their recognised agents.

That the public thinks as we do is sufficiently proved by the sales, which amounted to 63,600 tons from July 1846 to July 1847, and to 75,000 tons in the next 12 months. This

advance of 11,400 tons may be taken to represent 111,000 more acres manured with Peruvian Guano in 1848 than in 1847. Such an increase of consumption is the more surprising considering the notorious frauds which, what we must be permitted to call the sapineness of purchasers, still permits unprincipled persons to practise. Loam, coloured gypsum, coloured chalk, and other rubbish, continue in demand among a certain class of dealers, in spite of all that has been done by ourselves and others to expose them. The high price of the article, and the dullness of buyers, together constitute a temptation which dishonesty *cannot* resist.

Hence it is that amidst the most unquestionable success which attends the use of pure Guano, we are continually hearing people assert that "there is no goodness in it." Of course there is no "goodness" in loam or chalk; and those who use Guano should not mistake them for it. One thing is certain, that *all samples sold below the market price must be adulterated;* and this is of itself a convincing reason why those who employ it should turn their backs on the peripatetic agents who haunt country towns; for if such persons offer it for less than the market price, they offer a spurious article; and if they demand the full market price, there is no advantage in dealing with them. Cheap Peruvian Guano must either be stolen or adulterated: it is too bulky to steal, and therefore the inference is obvious.

While, however, we thus point out a means of escaping fraud, we are not insensible of the difficulty which some may experience in telling where to avoid making purchases. We, therefore, wish it to be known that although we have long, perhaps too long, been silent, we still have an eye to spare for detecting Guano cheats, and we invite the readers of our columns to assist us in their discovery and exposure. Gardeners more especially are interested in this matter, because they are rarely able to make purchases considerable enough to be worth the notice of the principal agents; and to them we look with confidence for information. This is certain, that if the proper application of Peruvian Guano fails to produce the desired effect, there is a grave cause for suspicion, which all concerned should endeavour to investigate.

Production of Eels.—I have repeatedly inquired of old expert fishermen, and also fishmongers who skin eels alive in our markets, how they are bred, but I can learn nothing satisfactory on this point. This very interesting question did not only puzzle the ancients, but has ever remained a mystery to the leading naturalists of our day. Buffon, in pointing out the absurd notions of old writers that eels are either bred from mud, or from parts of their skins left on stones, fell into error himself in stating that they are viviparous; at least if our best naturalists are correct, that eels are oviparous, the Count must be wrong. I think Mr. Yarrell mentions that he has found roe in eels, though that does not prove them to be oviparous. The same may be said of the viper, if examined before the female has basked in the sun, in order to hatch the roe or eggs within her body. The fact that eels at the end of the season, sooner or later, according to the increase of water, descend rivers in vast numbers, gave rise to the general belief that they migrate to the mouths of rivers in order to deposit their roe in brackish water. It does not appear, however, very clear whether they are compelled by the force of the flood, or by instinct, to increase their species there. If the latter, since so many are caught during their descent, it is strange that no roe is found in them, when it so much abounds in other fishes, while on such a mission. Besides, that eels should choose deep water for that purpose, is perhaps contrary to the law that governs both salt and fresh-water fishes, all of which leave the deep to lay their roe or eggs at the bottom of shallow water, in order that they may be hatched by the heat of the sun. It is owing to this very thing that we are indebted for the vast shoals of herrings and all other sorts of the finny race that frequent our coasts, and that enter rivers from the deep sea. But supposing that the roe in eels is not formed until after they are awhile in brackish water, their numbers congregated in the estuaries of rivers must be great indeed, nay, enough to attract more attention than it seems to do; and some eels caught there would of course have roe within them, a discovery which we have yet to learn. It is also worthy of remark that all animals which migrate, whether for food or to increase their species, when permitted, do return to their former haunts; and there is no reason to doubt but the same law governs fishes also; indeed, there are proofs enough of it, needless to mention. We never, however, hear of shoals of large eels again ascending rivers after having deposited their spawn; but the small fry from them appears in May in vast numbers, about the size of darning needles, making their way up into every little nook and crook. This migrating of young eels is called, I believe, eel fair at Richmond, and is the occasion of much fun to children in pursuit of them. It is surprising to see how fast these fry wriggle up sluices, waterfalls, and all sorts of impediments in the way of their ascent. I have often been amused at seeing them so occupied in small streams, connected with the river Yare, about 30 miles from the sea, or the supposed place where they were bred. Some writers assert that there are no eels in rivers and lakes above great waterfalls, which favours the belief that they are bred in salt or brackish water. But I believe that more recent authors deny the assertion. Supposing, however, that the latter are right, and that, in general, eels descend rivers to deposit their spawn, still, for aught we know, when they are confined in ponds, &c., they may have the power of depositing it there also. Be that as it may, however, it is strange indeed that no one has been able to say how eels are bred, even from the days of Pliny to our own enlightened times.—*J. Wighton.*

The Aphides.—The extensive family of the aphides, or plant-lice, offer many peculiarities deserving notice. The various species are some of the greatest pests to which the gardener, the florist, and the farmer are in this country exposed. The species, for the most part, infest each its particular plant; for example, the aphis of the hop (*Aphis Humuli*) is not found upon the rose tree; nor that of the bean (*A Fabæ*) upon the hop. These plant lice often appear in immense numbers and overrun extensive districts in an incredibly short time. Like White, of Shelborne, many a lover of flowers has frequently had to lament the almost instantaneous destruction of his honeysuckles, roses, and other favourite plants; which, "one week the most sweet and lovely objects that the eye could behold, would become the next, the most loathsome being enveloped in a viscous substance, and loaded with aphides or smother flies." The extraordinary rapidity with which these insects will sometimes overrun a hop garden, a rose garden, a bean field, or other collection of plants that may happen to suit their purposes, affords considerable countenance to the popular belief that they are wafted through the air by a peculiar haze or "blue mist," attendant upon an east wind; and this is sometimes partially true, so far as the autumnal migrations are concerned, but unfortunately for the popular hypothesis, at that time of the year the direct mischief for the season has been done; the immense swarms of aphides sometimes seen in autumn, having completed their own share in the work of destruction, have quitted the scene of their former devastations after depositing the eggs which are to give birth to a fresh brood in the following spring, and most probably quickly perish, though this is a part of their history not yet satisfactorily ascertained * * * * The wonder naturally excited by the almost instantaneous appearance of large swarms of aphides will, in a great measure, be dissipated, when it is recollected that they are endowed with an amazing fecundity. The rapidity of their production is, indeed, enormous; nine generations may descend from a single aphis in the course of three months—this has been proved by experiment—and each generation has been said to average one hundred individuals; so that Reaumur's calculation, that a single female may be the progenitor of 5,904,900,000 decendants during her own life, large as the number is, is probably within the mark. Professor Ranny says that he has counted upwards of a thousand aphides eat

time upon a single hop leaf; supposing, therefore, each of the thousand to be capable of producing the number of descendants mentioned by Reaumur, we need not resort to the popular belief in the blight-producing property of the east wind to account for the rapidity with which a hop-garden is frequently overrun with a pest, against whose ravages no adequate protection has yet discovered.—*Westminster and Foreign Quarterly Review.*

Taking a dispassionate survey of society at large, and of the social customs and wants of the age; to whom shall we award the high meed of intrinsic usefulness but to those who with heart and brain work right willingly to substantiate reformed systems and usages—who bring to existence benefits in which the community participate—who are the pioneers in unexplored regions of productiveness, and who by a laudable enterprize impart a germ from which increased national wealth is developed.

The spirited and improving Agriculturists in draining their lands from superabundant moisture—in removing impediments to good husbandry—in fertilizing poor soils and stimulating their farms to the highest state of culture; are the sons of enterprize who personify their qualities and perform those acts. Honour should be paid them by the Landowner, for it is they who enrich his property; the labouring classes owe them gratitude, for it is they find employment and good wages, and the public generally should acknowledge the great services they render in raising a greater quantity of the "staff of life" from the soil for general consumption. We propose in a brief manner to notice the acts or a few celebrated English Farmers, In order that a correct judgment may be formed of the spirit which actuated them, and of the great necessity existing of its being shared in by a greater number of the rural tenantry. We begin with the farming of Mr. Wm. Hutley, of Witham, in Essex, who occupies 1,500 acres of Land, 1,200 of which are under the plough; he has greatly increased its productiveness by practising a system of high culture and keeping a large quantity of stock; he fattens about an hundred bullocks annually on roots and oil cake, purposely to make good farm-yard manure; he stated before the Committee on Agricultural Customs that he never had a lot of bullocks, that paid him in their carcases for the food he had given them, but that he always looked for a return in their manure. He uses large quantities of artificial manure, having expended £600 during the last year in guano, rape-cake and star-fish; he employs a large number of labourers, always finding employ for the surplus hands, residing in the four parishes, with which his lands are connected; and although he is shortly about to give up 600 acres, he purposes keeping the same number of hands he has at present. He is of opinion that high farming can alone be remunerative.—We discover another improver, in Mr. Robert Beman, who resides at Stow on the Wold, Gloucestershire, and occupies about 2,600 acres of land; he has raised its produce greatly by drainage; he practices a high system of farming never expending less than a thousand pounds annually in artificial food and manures; he advocates greatly, converting permanent pastures into Arable land, because it leads to a better employment of the poor, and yield an increase of national produce; he stated publicly a little time since that he broke up some land eight years ago which was not worth fifteen shillings an acre for pasture, but that by drainage and good cultivation he had caused it to produce four crops of wheat and seven green crops since that time, and that it would now let for £2 per acre. We turn to Mr. W. Hesseltine who farms in North Lincolnshire. This Estate previous to 1812 was in so poor a state that it would grow but two quarters of wheat per acre; he has since then been gradually improving it by chalking and large applications of artificial dressings, and has not only doubled the produce of the farm, but also submitted to have his rent doubled; he now practices a very high system of farming, keeping after the rate of ten sheep to the acre, he keeps also a number of horned cattle, feeding them with oil-cake and corn, solely for the benefit of his manure. Another spirited Agriculturist appears before us in the person of Mr. Samuel Jonas, of Icklelon, Cambridgeshire, who farms over 2,000 acres of land, which a few years ago produced scarcely anything; he now grazes annually two thousand sheep and about an hundred beasts, besides keeping a breeding flock of four hundred, and various other stock besides; it cost him last winter more than an hundred pounds weekly in artificial food. He grazes purposely to keep his farm in high condition, as he calculated a loss of £2 per head on all the stock he fattens, and he recently made publicly an offer of a thousand pounds per year to any one who would graze five hundred bullocks on the land he occupies. On his principal farm, the person who proceeded him, kept but three hundreds sheep and no beasts, but on the same land he finds room for 1,200 sheep and 40 bullocks, the amount of his expenditure in artificial manures alone is £800 per annum. Mr. C. H. Lattimore, of St. Abbas, Herfordshire, is another improver, his Estate measures about 300 acres, and he has greatly increased its productiveness by growing root crops extensively, feeding large quantities of stock with artificial food, and by making additions to the soil, he pays on an average from forty to fifty shillings per acre annually for labour, which amounts to a sum more than double his rental. We must also notice Mr. Outhwaite, who occupies 485 acres in the North of Yorkshire, and who has greatly improved his farm by drainage and good cultivations; he expends from £100 to £150 annually in artificial food, and $250 per annum in artificial manures. We particularize the above gentlemen not because others are not to be found of equal enterprize; to poultray a correct representations of all that has been accomplished by Agricultural Improvers would require more time and space than we can afford; these references must therefore be accepted, as a slight sample of their achievements; there are however two individuals at least residing near us, who claim attention at our hands, one of these is the Rev. A. Huxtable, of Sutton Walrond, who has cultivated and brought to a state of fertility some of the poor Down land of Dorsetshire; the other is Mr. G. Parsons, of West Lambrook, Somersetshire, whose farm buildings and Agricultural machinery are the admiration of a large and extensive neighbourhood, and are the very best, the country can boast of.

It is now our province to inquire what would be the state of things if the whole of the British soil was occupied by such men as we have been referring to? Men possessed of the greatest enterprise, and blessed with sufficient capital to carry out their splendid undertakings? Why, one consequence would be a great demand for labourers, which would bring about a scarcity of hands in the market, sufficient for the rate of wages to be influenced; another would be that the working man would be in a condition to live better, and would consume more of the produce of the land, which would redound to the benefit of the occupier; another—that all rural trades connected with Agriculture would flourish from the great demand for new buildings, roads, fences, &c.; another—that a large increase of produce would be realized from the soil, which would entail on the community incalculable blessings; another—that the Tenantry themselves would get large profits for the outlay of their capital, and the grand result would be contentment and happiness to many thousands of our fellow-countrymen.

CHEAP MANURING.

It was said in our last that the combustible ingredients dissolve away in the air, from whence the plant gets them again. The farmer must then bear in mind that plants feed both by the leaves and roots; the leaves drawing carbon from the air, whilst the roots draw water (consisting of hydrogen and oxygen) from the soil. Our business, in manuring, is with the roots: but it must be here observed, that although the leaves will draw carbon from the air, enough for the natural produce, yet to get up a cultivated crop, of 10 or 20 times more than nature could produce, we must help the carbon by the roots also, which is a main purpose of dung dressing; the dung containing much carbon, which dissolves in

the sap that is taken up by the roots. Our cheap manures will strengthen the plant, and thus help it to draw more from the air than it could without them; but the greatest crops are to be expected when we feed from below as well as from above, as carbon constitutes near one-half of the solid substance of the plant. And here we may pause to remark, that green vegetables may contain, upon the average, ¾ of their weight of water; 400 lbs. leaving only 100 when thoroughly dried. And of that 100 we may average

Carbon	48		
Oxygen	33		
Hydrogen	6	Ashes	5
Nitrogen	3		

Thus the incombustible ashes are only about one-twentieth of the plant when dry (or one-eightieth when green and fresh); and as the four combustible elements constitute the substance and form of the plant, they are generally called its organic elements; whilst the ashes, thus slightly distributed through them, are commonly termed inorganic. This the farmer is to remember when he hears of inorganic manures, &c., which he will frequently find in agricultural publications and advertisements.

The (combustible or) organic elements then (carbon, oxygen, hydrogen, and nitrogen) are all found in every plant, and do not differ very widely in proportions; but the inorganic are much more variable. What their duty is, in small quantity, is not satisfactorily ascertained; but careful experiance has proved their absolute necessity to the plants' thriving and maturing their seeds; that for this purpose, some plants require different constituants and different proportions from others; and that were the land is deficient in, or exhausted of those which the pland requires, the languishing plant quickly recovers its vigour when they are (properly) supplied as manure. And when we are aware that they constitute only one-twentieth of the dry, or one-eightieth of the fresh green produce; and that even of this small proportion, the soil generally contains the greater part, and that much of the remainder is of very low price; we shall begin to understand why materials of such light carriage and little cost should form the basis of Cheap Manuring.

Of the 11 inorganic constituants enumerated in our last, four, Silica, Alumina, Iron, and Manganese, are generally present in the soil (except in mere sand or chalk); and lime is used as a digestive manure, in much larger quantities than the plant consumes. Soda and muriatic acid are both supplied in common salt, worth 1s. to 1s.6d. per cwt.; but as much more of soda is required than of the acid, the additional quantity may be supplied, cheap, in soda ash, at 12s to 16s. per cwt., or still cheaper in crude sulphate of soda, at 6s., which supplies sulphuric acid at the same time. And sulphuric acid may be supplied still cheaper, in gypsum, worth about 2s. per cwt. The only inorganic constituents of serious cost are magnesia (of which so very little serves, that crude sulphate of magnesia, 1 cwt. at 10s. to 15s., is enough for 3 or 4 acres,) and potass and phosphoric acid, which are of the utmost importance, required in larger quantity, and of net inconsiderable price. Potass, however, exists in all vegetable matters, and phosphoric acid in all animal excrement; and both are therefore present in the dung heap, unless it is drained and water soaked (when that is the case, there is no knowing what it contains; its character and quality are lost).—But the direct supply of potess is in vegetable ashes, or weeds, roots, hedge clippings, &c., unburnt, but composted with earth and lime (not rotted in water, which washes all the potass away). But our green crops carry off to much potass, that with all good economy, many crops, and even entire estates, would be the better for a further supply; and as wood ashes are costly in the quantity required, a cheaper supply is very desirable. Such an one we have at hand and inexhaustable, though hitherto quite neglected. Our granite will probably contain 5 per cent. of potass; which may be rendered available by heating, crushing, and working with lime; for which I hope to give detailed instructions in a future letter.

For phosphoric acid, the most direct source is bones; of which great quantities are lately discovered in a fossil state. They are softened and rendered more active by acid, either sulphuric or muriatic. A cheaper supply would be in night and town sewerage if properly saved, which is more and more attended to every year. Potash phosphoric acid are, then, the chief subjects of care in inorganic manuring. In our next we will see what each crop carries off, and the cheapest means of supplying them.—*J. Prideaux.*

TABLE TEACHING HOW TO SOW GUANO.

Cwts. to the English acre.	Weight of Guano per bushel.	Breadth of Drill.			
	lbs.	inches.			
2	56	27	1 gallon * should sow	201 yards	along 1 drill.
3	"	"	1 do.	134½	do.
4	"	"	1 do.	100½	do.
2	58	27	1 do.	208	do.
3	"	"	1 do.	140	do.
4	"	"	1 do.	104	do.
2	60	27	1 do.	215	do.
3	"	"	1 do.	143½	do.
4	"	"	1 do.	107½	do.
2	62	27	1 do.	222½	do.
3	"	"	1 do.	148	do.
4	"	"	1 do.	111	do.
2	64	27	1 do.	230½	do.
3	"	"	1 do.	153½	do.
4	"	"	1 do.	115	do.
2	66	27	1 do.	233	do.
3	"	"	1 do.	159	do.
4	"	"	1 do.	119	do.
2	68	27	1 do.	245	do.
3	"	"	1 do.	163½	do.
4	"	"	1 do.	123	do.
2	70	27	1 do.	250¼	do.
3	"	"	1 do.	167½	do.
4	"	"	1 do.	125	do.

* Eight gallons to the bushel.

GUANO ON WHEAT.—I beg leave to inform you that in the spring of this year one-sixth of an acre of three different descriptions of Wheat was dressed with guano on a damp morning, at the rate of 2 cwt. per acre. At harvest they were each carried to seperate barns, with the produce of a like portion of the fields to which no guano had been applied. I have every reason to bilieve the following statement to be a faithful account of the transaction;

	White Rough Chaff.	Porduce per acre—bsh, pk. qt.		
Guano	....	....	....	21 1 4
Nil	....	....	....	18 1 4
Increase	....	....		3 0 0
And 17 trusses of straw.				
	Red Spalding.			
Guano	....	....	....	36 3 5
Nil	....	....	....	32 0 2
Increase	....	....		4 2 3
And 15 trusses of straw.				

The portions of land selected formed parts of three very large fields of Wheat.—*J. N. B.*

CAUSE OF PULMONARY DISEASE IN THE HORSE.—The cause and result are not badly explained in a note to a prize essay written by Mr. Stevenson, of North Berwick, on the feeding of farm horses:—"The proper ventilation of stables is comparatively a new subject; in fact, the present system has no reference whatever to the breathing of the horse, exclusion of free air being the law, its free admission the exception. The necessity of a complete revisal of the construction of stables, with reference to their proper ventilation, may be best seen by reflecting on the amount of pure air required by the horse. In none of the publications which I have consulted, could I find correct information as to the size of the lungs of the horse, or of the quantity of carbonic acid gas given off by the lungs. If, however, we take the size of the lungs, we can thus approximate pretty nearly to it. The or-

dinary girth of man is a little less than three feet; the ordinary girth of a draught horse is six feet; we may, therefore, with all safety, consider the lungs of a horse at least four times the size of man's. A man inspires each time about 25 cubit inches of air; a horse will, therefore, inspire and expire each time about 100 cubic inches. The inspiration of the horse I have found to be about eleven times per minute.—This observation was taken at 6 o'clock a. m. There can be little doubt, however, that it varies considerably according to circumstances. Let us, however, take eleven inspirations per minute, this will make per minute,

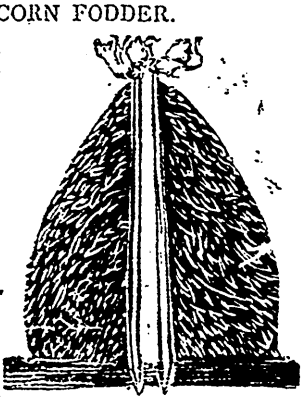
1,100 cubic inches,
60

Per hour..... 66,000
24

Per twenty-four hours....1,584,000 cubic inches

By multiplying these cubic inches by the number of horses kept in the stable, we can then imagine what the horse suffers. In the mysterious process of respiration, a quantity of carbonic acid gas is given off by the lungs from the blood.—The amount in man, according to Sir H. Davy, is 3,680 cubic inches; this multiplied by four, will make 126,720 cubic inches, the quantity given off by the horse. All this, independent of the watery vapour exhalted, and the ammonia with which every stable must in some degree be filled. The stable, then, if not thoroughly ventilated, must be constantly filled with carbonic acid gas; and did it not happen that his food abounds with carbon, his frame could not withstand the velocity of his respiration. When we consider these tolerably well-established facts, need we be surprised when we see the horse cut down by pulmonary disease; our only wonder should be how the horse can live in the ordinary stables of this country."—*Maidstone Gazette.*

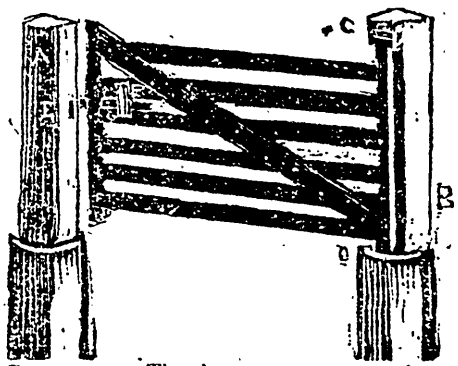
STACKING CORN FODDER.



The practice of sowing two and a-half bushels of corn per acre in *thick drills*, exclusively for fodder, is rapidly extending through the country, farmers discovering that they can in this way obtain the richest food for wintering cattle, which will be wholly consumed, and be preferred to the best hay,—at a cost never exceeding a dollar and a half per ton, on good land in the country. In planting, the corn is strewn from a hand basket rapidly in the one horse furrows, to be as quickly covered with a common harrow; no hoeing, and but once cultivating, is ever needed; and all weeds are so effectually smothered, that the ground is left as clean as a neat woman's floor.

But thus easily raised, the fodder must be well preserved, or the labor will be lost. If put up in shocks, they should dry several weeks—the *leaves* may be quite dry, while the stalks will furnish moisture enough to cause hot fermentation, mouldiness, or decay. Stacks of this kind of fodder settle very compactly, and the steam from the heating, which must always take place, will not find vent, unless a chimney is made in the middle of the stack, by setting three or four rails, uprightly in the ground, a foot apart, to form the centre of the stack, as shown in the above figure. A further precaution, highly essential, as well as useful, is to salt well the fodder while the stack is going up. Stacks of small size should be preferred, and so placed that in case of much heating, they may be thrown with a fork into a new stack, which is often necessary under unfavorable circumstances.—*Albany Cultivator.*

FARM GATE.



EDS. CULTIVATOR.—The above represents, or at least is intended to represent, a farm gate, which in cheapness, convenience and comparative simplicity, of construction, is not excelled by any one which has come to my knowledge. I have one on my farm, built by myself, without the aid of carpenter or blacksmith, and commanding general satisfaction.

A and B are posts, hewn out of cedar, locust, or rich yellow pine—B is cut and morticed out in such a manner that the gate can be enclosed in the top part C, by a piece of wood slipped in dove-tail fashion. In the bottom, a 1½ inch auger hole contains a rich pine knot D, with a round tenon on top; this is received in a hole bored in the bottom of the gate piece; so that by this arrangement it is kept off the ground, and top and bottom of the principal part of the gate, are secured against the injurious effects of water, while the greasy nature of the pine knot on which it turns, causes each movement of the gate to be easy in every kind of weather.

A has a hole, E, morticed in its centre, to receive the tongue of the latch F; the last is made according to the model given in your vol. for 1847, page 159.

You will observe that this gate has no iron about it, and opens to its full extent either way, while the latch, by being thrown back with the gate, slips over the notch at G, and shuts itself.

Lightness is one of the main requisites in this subject, to keep it from swagging; I have obtained this by making my gate out of ¾ stuff, and the scantling holding the latch 2½ inch square.

In my next I will send you a plan of a machine for drawing hickory, oak, and other shrubs, out of the soil.—ALB. C. RICHARD. *Walden's Ridge, Hamilton Co. Tennessee, September*, 1848.—*Ib.*

PRESERVATION OF FOOD.

An elaborate article on the perpetual preservation of food has lately appeared in the London *Westminster Review*. The writer considers at length the different modes adopted in various countries for the preservation of grain, meats, fruits, vegetables, &c.; and he comes to the conclusion that these processes for the most part, have been "little in advance of the squirrels and other animals;" that they are not as good as those of bees, for "they have an instinctive perception of the true principle, viz., *the exclusion of air, which they accomplish by hermetically sealing up their honey cells.*" He alludes to the preservation of articles of food in tin cases, from which the air is excluded. Meat and other provisions have been kept in this way for years; but he thinks the expense of these methods prevents their ever being more than a luxury.

He mentions a singular, but in many respects useful kind of *granary* adopted by the people of some parts of Spanish America. "The skin of an ox is taken off entire; the legs and neck being tied round, it is filled with tightly-jammed earth through a hole in the back, while suspended between posts. When dried to a state of parchment, the earth is taken out, and the bloated bag, resembling a huge hippopotamus, is filled with grain, which is thus kept air and vermin proof."

He recommends the construction of granaries on the principle of excluding the air, and observes:

"The practicalization of this is neither difficult nor costly: on the contrary, close granaries might be constructed at far less proportional cost than the existing kind. They might be made under ground as well as above ground, in many cases better. They might be constructed of cast iron, like gasometer tanks; or of brick and cement; or of brick and asphalte, like under-ground water-tanks. It is only required that they should be air-tight and consequently water-tight. A single man-hole at the top, similar to a steam boiler, is all the opening required, with an air-tight cover. The air-pump has long ceased to be a philosophic toy, and has taken its place in the arts as a manufacturer's tool; and no difficulty would exist as to that portion of the mechanism. Now, if we suppose a large cast-iron or brick cylinder sunk in the earth, the bottom being conical, and the top domed over, an air-pump adjusted for exhausting the air, and an Archimedean screw pump to discharge the grain, we have the whole apparatus complete. If we provide for *wet* grain, a water pump may be added, as to a leaky ship. Suppose, now, a cargo of grain, partly germinating, and containing rats, mice, and weevils, to be shot into this reservoir, the cover put on and luted, and the air pump at work, the germination would instantly cease, and the animal functions would be suspended. If it be objected that they would revive with the admission of the air; we answer that the air need not be admitted, save to empty the reservoir. If it be contended that the reservoir may be leaky, we answer, so may a ship; and if so, the air-pump must be set to work just as is the case with a water pump in a leaky ship.

"The same arrangements that are good on land are good at sea. Many cargoes of wheat have been abandoned owing to heat and germination on their passage. Rats, mice, and weevils, also, are very destructive. If the vessel were built with metal-lined, air-tight compartments, the air might be exhausted by a pump; occasionally trying the pump to ensure against leakage; and thus even now, undried grain might be carried and delivered across the sea undamaged. Collateral advantages would also be gained; the vessel would be more safe by means of air-tight compartments, and also more buoyant. And the same arrangements would be equally available for various kinds of goods, subject to damage in transit,—such as are hermetically sealed in tin cases; and thus the expense of packages would be saved.

"In reservoirs on shore the air might not merely be pumped *out;* warm air might be pumped *in*, to dry damp grain. Water might also be pumped in and out to *cleanse* the grain.

"Similar reservoirs or magazines on a similar scale might be constructed for butchers or other provision dealers, and meat might be preserved fresh for weeks in the heat of summer, preventing the necessity of waste, or of selling at ruinous low prices; and so with the fish brought to Billingsgate or other markets. On the same principle; there is no doubt, that fresh meat, as sea stock, might be carried instead of salt meat, and that fresh provisions might be transported from any part of the world to any other part. Pork, or beef, or mutton, or venison, might be killed in America and transported to England. Weevily biscuit would be a traditional commodity only, in the annals of sailor craft.

"As regards the economy of transport of grain from foreign countries, the process would be as follows. The corn brought down the Mississippi to New Orleans, or by canal or railroad to New York, would be discharged into the air-tight magazines of the vessel. On arriving at Liverpool, or Birkenhead, or Harwich, the Archimedean screw pump would discharge the grain into close waggons on a railway on the edge of the quay. These waggons might be rendered measurers of quantity, being all made to hold a given number of quarters; and thus all labor and expense in measuring would be saved. The waggons so loaded in bulk, and without the expense of sacks, would discharge their contents into reservoirs beneath the sidings; say for instance, the railway arches of the Eastern Counties. There it might remain secure against all detriment for any number of years the owner might desire, with the minimum of expense in transit and stowage. The waggons would be constructed with a hatch at top, and a discharge-pipe below."—*Ib.*

HOW TO RAISE THIRTY BUSHELS OF WHEAT PER ACRE WHERE YOU COULD NOT RAISE TWENTY BEFORE.

Eds. Cultivator.—Where you have a good clover sod, let the clover grow until the first week in June; then take a good team and plough, and turn the clover all under; then roll the sod down flat, and let it lay eight or ten days; then take a light harrow or cultivator, and pulverize the ground fine, and about the 25th of June sow 2½ bushels of corn to the acre, and after harrowing it well, roll it down smooth. About the last week in August, take your roller and press the corn down as flat as possible, going round with the roller the same way you intend to plough the land; then plow the land as deep as possible, and turn all the corn under—follow with the roller, pressing all down flat. Thus you have two crops well mixed with the soil for manure.

Then take a light harrow or cultivator, and pulverize the ground fine, and sow your wheat about the middle of September, and if you do not have one-third more wheat than you do where you summer fallow, tell me I am mistaken in a cheap method of manuring land, The corn will grow so thick that it will keep every other plant down, and leave the ground clean, and if there is a few small leaves of the corn scratched up with the harrow, it will afford a good top dressing for the wheat. Ira Hopkins. *Auburn, Sept.* 22, 1848.

Newcastle Farmer.

COBOURG, CANADA WEST, JANUARY 1, 1849.

FREE TRADE.—WILL IT BENEFIT THE CANADIAN FARMER?

We have no fear of being charged with being a Free Trader, or sanctioning it, in the way that nostrum has been endeavoured to be thrust upon us, and simply for this reason, that the thing is an impossibility, or nearly so. Could it be universal, or even general, the case would be widely different, but to be so, all nations need to be similarly situated, with circumstances, interests, and policy alike. This, with nations whose tariff proceeds contribute to a necessary revenue, and which revenue cannot be materially diminished without ruinous consequences to the country, is an impossibility.

Free Trade cannot be beneficial to any nation or class, except by the opening of new markets for the sale of surplus produce or manufactures, or by the removal of restrictions which make the present markets difficult of access for either sale or purchase; and should such advantages be obtained by its adoption, it must be remembered that they will be accompanied by increased and extended competition, which it is more than probable would overbalance any advantage which might accrue.

What new market could possibly be opened to the Canadian farmer when his produce would be in demand? None whatever. Our extreme isolated position prevents our access to any additional market except that of the neighbouring States, and what can we supply them with which they have not already, or can procure, at as low a rate as we, under the most favorable circumstances could furnish them. It will therefore become a question, what can we receive of them which will cost less than from our present source of supply—for it must be remembered that a penny saved is a penny got—and the question is worthy of consideration.

We have been led into this inquiry from a paragraph which lately appeared in the *Cobourg Star*, stating the ruinous effects the adoption of the principle would produce here on trade generally, and instancing in particular those of the Farmer, the Shoemaker, the Machinist, and the Woollen Cloth Factor. Now, on due consideration of the subject, we must confess we do not see how any but the Shoemaker can or ought to be affected by the measure. The exclusive policy of the Americans in their prison discipline, is most certainly detrimental to every class with which convict labour comes into competition; it is unjust to their own free citizens, it is a tax upon native industry, and an unnatural impost upon the skill and talent of the artizan and mechanic. Where the only consideration is to make the convict labor remunerative to the state, and where that labor is obtainable at the veriest minimum of payment, such labor ought not to be brought into competition with that of the honest citizen or subject; it is unjust, it is iniquitous, it is, in fact, offering a premium to vice and crime, while it robs the diligent, the virtuous and the just, of the wages due their industry, and we must confess, from motives of pure patiotism and justice, we should be for excluding all articles thus manufactured from the Province, save and except such articles as are not now the produce of Canadian manufacture.

But we are of opinion, with regard to the other occupations enumerated, as the same peculiar objection does not exist, that they can have no peculiar claim above those of other descriptions. How is it that the Farmer or Machinist do not or cannot compete with the same class on the other side? Is the working, or raw material higher in price on one side of the lake than the other? We expect not. Are provisions dearer in Canada than in the States? we think such is not the fact. Where then is the extra expendite? is it that the artizan has to be paid an extra price for his labor? This is unreasonable, and the Farmer ought not to be compelled to submit to extortion. He is obliged to sell his produce at the market price, and it is unjust to expect him to sell and buy too at a sacrifice.

As far as the Woollen Manufacturer is concerned, we are ready to admit the statement of our contemporary that we have the best manufactory in the Province, that the fabric is of superior quality, and that we have decided advantages, in consequence, over the old method of converting the fleece into the necessary articles of wearing apparel, but when we *know* that we can purchase the identical article in any of our large towns at from 10 to 15 per cent. under the price charged at the factory, we think it is not fair that the farmer should be compelled to become a *wholesale* purchaser at high *retail* prices, which has been the case during the past year. The Farmer, in the old country, always counts on the produce of his fleece as a cash article, meeting his extra expenses of harvesting, and extra labor, at the very least, but here, on the present principle, he is forced to become a trader, and barter cloth for cradling, and breeches for binding, and pay his dearly purchased labor in Tweed and Satinet, and that under circumstances the most disadvantageous. Scarcity of cash, say the managers; true, but are the Farmers alone to bear the burden? 'Tis the old story over again,—the King rules all, the soldier fights for all, the Parson prays for all, the powers that be tax all, the Barber shaves all, but it is the Farmer pays for all!! Is there any default in the revenue, who pays the piper? who is expected to make up the deficiency? The Farmer. Is any job concocted for the benefit of one or more individuals, however scandalous the appointment, however unnecessary the outlay, however inefficient the securities, who is sure to lose? The Farmer. Does any defalcation occur through Township, County, or District officer, on whom do the double rates fall? Why the answer must still be, the Farmer.

But, to return a moment to our subject, the manufacturers do not scruple to make purchases of wool in a foreign market, and thus regulate the price of the home article, and we think the least they could do, would be to allow the Farmer, whom they force to become a trader, and who exchanges all his wool for cloth, nearly the same advantages as those given to the merchant. To the manufacturer the result would be the same; the whole manufacture is consumed in the country, and no more than the country demands can be profitably manufactured, and inasmuch as he receives his pay beforehand, (in the wool,) the Farmer who thus pays should be proportionably benefitted.

Dr. Yellowly on Spade Husbandry.—There is a valuable publication by John Yellowly, M.D., F.R.S., in which the merits of spade husbandry are ably advocated and fully detailed. He does not endeavour to demonstrate its advantages by theoretical reasonings, but by practical experiments made upon the farm of John Mitchell, Esq., at Waterfield, in the parish of Wymondham, in Norfolk. The farm consists of 317 acres, of which 207 are arable, and 110 in pasture and plantation. It is a mixed soil, but rather disposed to be heavy. A great number of able-bodied labourers being in an almost constant dependence on parochial relief for the whole, or a considerable part of their support, Mr. Mitchell was desirous of having spade husbandry introduced into the district, from a belief that much of that superabundant labour would be employed in conducting it, and that the increased expense which would thus be occasioned, would be fully compensated by the augmented produce. The process was begun with the spade, but it was found that a strong three-pronged fork of 14 inches deep, and 7½ inches wide, was more manageable and less expensive than the spade. It cost 4s. 6d. instead of 6s. 6d., weighing 8lbs., and when worked down could be relaid at a trifling expense. The digging is effected by taking in about 4 inches of earth at a time, passing perpendicularly, and getting to a proper depth at two thrusts. The earth is not, however, turned out of the trench to a greater depth than 10 inches, though the fork may get down as far as 13 or 14; but that which remains at the bottom, in the state of what is called crumbs, answers the purpose equally with the earth which is thrown out, of forming a permeable medium for the roots of the plant which is to grow in it. The men receive, for the ordinary digging, after a white crop, from 2d. to 2½d. per rod of 30 square yards; the price varying according to the tenacity of the soil, and whether manure is to be dug in. When the land is to have a fallow crop, that is, Turnips, Mangold wurzel, or Cabbages (for no part of the farm has ever a naked fallow,) there is first a ploughing, which is done at the season when the horses can be best spared, and afterwards a digging at from 1½d. to 2d. per rod. Though digging is the principal occupation of the men, yet they are employed in all the common operations of husbandry at the common rates of payment; and all the work of the farm is paid for as much as possible by the piece. The ordinary earnings in digging are from 11s. to 12s. per week, according as the rates of wages may be high or low. A 7 years' course of crops seems preferable to the usual one of four in spade husbandry, which would be according to the following:

Year.		Acres.
1	Fallow crop, Turnips, Cabbages, &c.	30
2	Barley	30
3	Clover or artificial Grasses }	58
4	Do. do. do. }	
5	Oats	29
6	Beans	30
7	Wheat	30
	Total of arable land	207

It is to be observed, however, that the Clover layer has always been ploughed for the succeeding crop, and not dug; the horses, when not wanted for other purposes, are employed in assisting the diggers in preparing the land for seed. Spade husbandry can hardly be expected altogether to exclude the plough; for as a certain number of horses are necessary for various operations on a farm, they will naturally be employed in ploughing rather than kept idle. Twenty labourers, besides a bailiff, are kept upon the farm, instead of 13, who would be necessary under the ordinary system; and 5 or 6 horses instead of 12. With so small a number of horses it is clear they would not be equal to all the demands of the hay and corn harvest, and hence a good deal of the hay and corn are stacked in the field where they are grown.—*The New Husbandry, by Law. Rawstorne.*

LAND DRAINAGE.

It has been already remarked that the system of drainage proposed to be adopted, is subject to be affected considerately by the nature of the outfalls, and, it might have been added, also by the condition of the ground as to levels. It frequently happens that a system of deep draining is the most applicable to the land, but that the insufficiency of the outfalls and levels forbids its application. In every instance where the levels are unfavorable or difficult, the depth of drainage adopted must be so limited as to preserve the necessary degree of fall. Considerable attention and art is often required under such circumstances, to determine on and lay down the plan of the drainage. If such be not bestowed, the neglect will be fatal to the success of the operation. A practised eye and the use of the spirit level are the chief means in the attainment of this object. Apart from these difficulties, the modern or improved system of draining is a very plain affair, in comparison with the science and tact required under the old or Elkington method; in the one, simple examination of the subsoil and understrata is found to be enough, and then the ground being riddled with drains, neither under nor surface water can escape; but in the other, as comparatively few drains are employed, and these so laid out and cut as to intercept the springs, great skill is often required so as to render it successful. The latter method fails in that thoroughly laying dry of the soil which is accomplished by the former, but it affects much by small means, and to enable it to do so requires far greater knowledge and ability than is necessary in the other.

When the proposed drainage is uninfluenced by the state of the outfalls and levels, the system to be adopted in regard to depth and distance apart, the materials to be used, and every other particular, depends entirely on the nature of the circumstances of the case. Durability in execution and efficiency in action should be studied, so far as is consistent with a proper economy, that the operation may be rendered to the highest degree beneficial; and this is attained neither by the greatest return of interest upon a limited outlay, nor by the fullest amount of profit upon a large expenditure, but from the judicious application of money up to that point beyond which it would cease to be remunerative. The system to be adopted in regard to depth and distance apart resting wholly on circumstances, there can be no real difference of opinion among all intelligent drainers on that head; it, in fact, admits of none, and never would be heard of if parties would divest their minds of all bias, and meet each other with honest candour, and in a language which each understands. The only difficulty in the matter is to be able to effect the improvement with due regard to what has been laid down above in respect to the attainment of the utmost amount of benefit, all things considered.

Whenever the subsoil and understrata are of a nature to admit freely of the passage of water through them, or contain veins of porous materials disposed in continuous sheets nearly in the plane of the land, then we must have recourse to what may be termed deep draining. The degree of depth will depend much on the drawing powers of the under strata, and on the breadth of land on either side it is found to render sufficiently dry; and, if practicable, (as might have been previously stated,) the bottom should be formed in clay, or other stratum of sufficient firmness, for the support and preservation of the duct. Again, on the other hand, when the subsoil is found to be little pervious to water, and contains within an accessible depth no open strata, these are the circumstances calling for the application of shallow, and, it may be added, frequent draining. In such cases, to cut deep is to incur a useless expenditure of money; sometimes even positive injury is thereby entailed, though I am of opinion that this is less the fault than that the additional benefit does not keep pace with the increase in expense. The drains must be placed at a small distance apart, be the depth what it may, otherwise the land will be but partially dried; and whenever we find such to be the case, there is no need to incur the expense of going deep. However, I say, nevertheless, go deep if you will; there is generally no great harm in going down, farther than the sinking of your money, but you must not also go wide. I have found, and have laid it down as a maxim, that there is far greater chance of error being committed in respect to width than in respect to depth; yet as great depth (on such soils) is unnecessary, and that as almost any land can be thoroughly laid dry by drains of a moderate depth placed at narrow intervals, it is only incurring an expense which might well be spared, and in all likelihood rendering the improvement in point of remuneration, no improvement at all.

The drainage of such soils is expensive at the best, and if it is to be injudiciously gone about—as incurring the cost of deep cutting must be considered—little of it, I am afraid would be attempted. I may conclude this portion of the subject by remarking that the modern or improved system of thorough draining consists chiefly in the employment of drains moderate in depth and placed at moderate intervals apart; and that whenever these means are departed form, by extending the width and cutting down to the springs, it is just going back to the old or Elkington system, and applying it to every description of subsoil, whether adapted for its application or otherwise. Elkington's method is excellent in its proper place, but it must only be adopted in conjunction with thorough drainage; it never can wholly take its place.

From the Olive Branch.

FARM WORK FOR JANUARY.

This is by no means an idle month with the farmer. He must be on the alert now as well as during the spring, summer and autumnal months. Winter is the time when all the maxims of prudence and economy with which an extensive practical experience may have stored his mind, should be remembered and applied. In the management of his stock, in the judicious preparation and economization of his fodder, and in the regulation of his domestic affairs, generally, he will find sufficient to keep him constantly employed, and render idleness and inactivity displeasing, and a "luxury" too expensive and costly to be indulged.

As the wood has been got up, now is the time to cut, split and house it. Fuel prepared at this season and dried in the house, without exposure to the atmosphere, is much more valuable for purposes of deflagration than when left out to soak and season alternately in the ordinary way. Some farmers practice felling their trees for fire-wood in August—leaving them uncut and without trimming till the snow falls, when they are cut into convenient sled lengths, and conveyed to the wood-yards, to be sawed and otherways properly prepared for the stove or hearth. The better way, however, is to cut at the time of hauling, which should always be a year at least in advance of the time when it is to be used. Green wood, especially if it be knotty and of poor rift, is prepared with far greater ease, than when permitted to become partially seasoned. By drying in the wood house, it is also heavier, and burns with a clearer flame and less smoke. There is nothing more perplexing or annoying to a house-keeper, than to be compelled to go out in wet and stormy weather to a pile of green, unseasoned wood, to procure the materials for a fire, which requires a long time and great efforts to kindle, and produces much smoke, but little heat.

Chopped Fodder.—Every farmer should provide himself with the implements requisite for cutting the food given to his stock, whether hay, straw, corn, or roots. Cutters, for this purpose, are now on sale at most of our agricultural warehouses, and are generally so cheap and durable as to render the cost, compared with their utility, an objection of small weight, especially to those who are desirous of economizing their time, and the amount of feed required for their stock during winter. Roots should never be fed out whole. Cattle are often choaked by attempting to swallow whole potatoes, turnips, &c., and the loss of a single animal will be more than sufficient to pay the expense of a machine, and the cutting of all the root feed required for a stock of ordinary number, during a whole year. Root cutters, when properly constructed, are easy and efficient in their operation—seldom requiring expensive repairs, and a great saving of food besides.

Tools.—You can now look over your farming implements, construct new ones, if needed, and mend such as may be out of repair. In this way, a great saving may be effected, and your implements put in a condition for instant use when wanted in the spring. All large tools, such as wheels, carts, harrows, cultivators, rollers, drags and ploughs, should be housed.

MULTUM IN PARVO.

The Chinese invented gunpowder about the time of Christ, and used it in cannon. The force of explosion of gunpowder, when closely confined, is 6½ tons to a square inch. Four grains of opium are equal to a tea-spoonful or 100 drops of laudanum. The microscope enables us to detect animaculæ the 10,000th of an inch long. The film of a soap-bubble, about to burst, is about three-fourths of the millionth of an inch in thickness. The Royal Library at Paris contains a Chinese chart of the heavens, made about 600 years before Christ, in which 1460 stars are correctly inserted. The organ was invented by a barber of Alexandria, about 100 years B. C. The piano-forte was invented in London, about 1766, by a German. In the arctic regions, persons can converse at more than a mile distant, when the thermometer is below zero. The first voyage around the world was completed in 1522. Japan was discovered in 1542. The army with which Napoleon intended to invade England, consisted of 160,000 soldiers, 10,000 horses, 17,000 sailors, and a fleet of 1300 vessels. Ancient soldiers were trained to fight with either hand. The Greeks and Romans had no standing armies in time of peace. The European nations have had in service, at different periods, the following armies:—Russia and Austria, 500,000 each; Prussia, 350,000; Great Britain, 300,000; France, 650,000; Spain, 150,000; Turkey, 450,000.

Reasty Bacon.—In answer to one of your correspondents enquiring how to avoid this evil, I beg to state that I have had the experience of many years; that we used to have reasty bacon at our house, although home cured, and that we have none now; and that the secret is simply this—dry it thoroughly and keep it dry. The best place for a flitch is on a rack immediately over the kitchen fire, but above the immediate influence of its heat; but I have insisted upon my bacon when dry being cut into pieces, and packed in sand dried in the oven, or dried bran, or dried fowl Barley, or, in fact, anything which will keep it dry and unexposed to atmospheric changes, which are the cause of the evil. We have long eschewed smoke drying. I know an excellent farmer who makes his own malt and keeps his hams (capital eating they are) in the malt;—*H., Oxford.*

Ameliorating Crops.—"Such crops as are supposed to improve the lands on which they are cultivated. The most common ameliorating crops are carrots, turnips, artificial grasses, and most others of the green or fallow class; yet though some of them occasionally ameliorate land, by altering the chemical condition of the soil, by choking weeds, and by intermixing with the soil a very large amount of manure, they rarely benefit land by their direct influence, but, in general, are merely the occasion of improvement by manuring and cleaning. An ameliorating crop either destroys weeds by taking entire possession of the soil; or occasions weeds to be destroyed, oxygen to be absorbed, and inert matter to be decomposed, by frequent workings of the soil; or exhausts mischievous excrementitious deposits of preceeding cereal crops; or makes such excrementitious deposits of its own as are useful to succeeding cereal crops; or occasions a thorough preparation of the soil, by means of previous manuring and a series of ploughings for subsequent cereal crops; or brings large contributions of manure, and a great amount of useful mechanical pressure, by its being fed off; or contributes the whole of its own substance to the dung-heap of the farm-yard."

Leisure Hours.—It was a beautiful observation of the late William Hazlitt, that "there is room enough in human life to crowd almost every art and science in it. If we pass no day without a line—visit no place without the company of a book—we may with ease fill libraries or empty them of their contents. The more we do, the more we can do; the more busy we are, the more leisure we have."

Why do not Savage Populations Increase?—H. L.—Their increase is limited by their means of existence. It has been remarked, by a great authority on this subject, that "A nation of hunters, on a limited space, is utterly incapable of increasing its numbers beyond a certain point, which is soon attained. The carbon necessary for respiration must be obtained from the animals, of which only a limited number can live on the space supposed. These animals collect from plants the constituents of their organs and of their blood, and yield them, in turn, to the savages, who live by the chase alone.—They, again, receive this food, unaccompanied by those compounds, destitute of nitrogen, which, during the life of the animals, served to support the respiratory process. In such men, confined to an animal diet, it is the carbon of the flesh and of the blood which must take the place of starch and sugar; but 15lbs. of flesh contain no more carbon than 4lbs. of starch, and while the savage with one animal and an equal weight of starch could maintain life and health for a certain number of days, he would be compelled, if confined to flesh alone, in order to procure the carbon necessary for respiration, during the same time, to consume five such animals. It is easy to see, from these considerations, how close the connexion is between agriculture and the multiplication of the human species. The cultivation of our crops has ultimately no other object than the production of a maximum of those substances which are adapted for assimilation and respiration, in the smallest possible space. Grain and other nutritious vegetables yield us, not only in starch, sugar, and gum, the carbon which protects our organs from the action of oxygen, and produces in the organism the heat which is essential to life, but also in the form of vegetable fibrine, albumen, and caseine, our blood, from which the other parts of our body are developed.—*Maidstone Gazette.*

The Use of Lime.—"I hear many people praise lime highly—whilst others contend that lime is of no use whatever. Now I am about to break up a piece of rough land, and should be glad if you can furnish me with any information on the subject.—A Farmer." The following extract from a prize essay on the reclaiming of waste land, by Mr. Robt. Elliott, of Dumfriesshire, will throw some light upon this subject.—Lime seems by this to be favorable for green and root crops, but must be used lightly for white crops.—"Lime I look upon as almost indispensable for all newly improved land when dry, though I have found on light soils, especially on moor with a black surface, and moss, it may easily be overdone. On some parts of this description, which I limed, for a trial, with 120 bushels imperial measure per acre, the corn was worthless, not from want of straw—for the crop was bulky—but it was seized with blight, scarcely a pickle being in the heads, and every yard could be traced where the lime was put on of that thickness; and on the parts which were lighter done, and those which had none, the ears were well filled. In the fur-

nip crop, however, it was different, the turnips being good in proportion to the quantity of lime laid on. Where no lime was used, was a very poor crop; where lightly done, a fair crop; and where the land was limed heavily, the crops were very bulky. The grass also was good in proportion to the quantity of lime used; indeed I found generally, on all light moory soils, that it was not easy overliming for green crops; for white crops, on the contrary, easily overdone; and, after repeated experiments, I arrived at the conclusion that, on all soils of this description, 75 imperial bushels per acre is as much lime as can safely be used. I ought, however, to mention, that the lime I used was of a very superior description, both as regards purity and burning—indeed, better quality of lime could not be found anywhere.—*Ib.*

Leaves.—What shall I do with my Leaves? Are they good for anything? asks a correspondent. Do with them! good for anything! Why treasure them to be sure, as if they were coin of the realm; they are good for everything which a gardener has to do. They are the best of all shelter, the best of all materials for bottom-heat, the best of all soil, the best of all drainage, the best of all manure. It is true they contain little or no nitrogen, but they rot quickly, are full of saline matters, on which everything that bears the name of plant will feed gluttonously, and from their peculiar structure allow air to pass in and water to pass out with perfect freedom.

If we wish to know what leaves are good for, we have only to burn them and see what a quantity of ash they leave behind. All that ash is as much food for other plants as beef and mutton are for us. It is the material which Nature is perpetually restoring to the soil, in order to compensate for the waste which is produced by the formation of timber. In wild land, trees are annually thus manured; were it otherwise, a wood would be a roof of life overshadowing a floor of death. If we can remove the leaves from our plantations, it is only because of the artificial richness of the soil in which they grow. This sufficiently indicates the value of leaves, which are in truth hardly less important in their death than they were in their life, though in a different way.—*Gardener's Chronicle.*

Manures.—Although it is as vain to attempt to keep a garden in good heart without manure as it is to try to preserve a good state of bodily health without a sufficiency of food, there are parties to be found every day who think the experiment worth trying. Because they keep neither horses nor pigs, they will not go to the expense of buying those substances by which the exhausted energies of the earth are restored. The starved ground, through this ungenerous treatment, is unable to repay the toil expended on it, and dwarfish and unhealthy productions are the result. Although the subject is one not very proper to be presented to ears polite, it is nevertheless of the utmost importance, and a few lines devoted to it will not be very badly spent. The question of manures may be called a national one, intimately connected with our wealth and happiness, and any one who points out the most economical modes of fertilising the land confers a benefit on his fellow-creatures. Our observations now refer to small gardens, but a principle will pervade them applicable in some degree to the largest farms. In the spirit of a Leading Article in last week's *Chronicle*, respecting the Dublin Horticultural Society, we believe that what is calculated to benefit the amateur gardener may have important bearings on the pursuits of the farmer.

The resources of an ordinary house and garden, if properly husbanded, will go far towards manuring a good-sized piece of ground. All vegetable refuse, leaves, stalks, &c., should be collected into a heap, and when thoroughly rotted, will make the very best manure for flower beds or for plants in pots.—The flower-garden will never require a dressing more powerful than good leaf-mould, some special things, Roses for instances, excepted. If the sweepings of paths and of sitting-rooms, or of the house generally, which contain a good deal of sand, are mixed with this vegetable refuse, in a year a good compost will be ready for use. Wood ashes are highly beneficial for any purposes, but cinders are not desirable things except in heavy clayey soil. The fine soft ashes arising from coal, thoroughly burnt, may be always used with advantage.—Bones, old rags, cuttings of hair, &c., are all useful; and the amount of these things in a year from a small family is very great. Those who live in country places may often have road scrapings for the trouble of fetching, and these are great improvers of a manure heap. All these matters should be turned occasionally, and used when thoroughly rotten and incorporated.

But the cloaca is the grand source of manure when properly managed, which is not the case in one instance in ten. In most houses there is a common receptacle, into which all substances liquid and solid are thrown, becoming in the process of accumulation a great nuisance, and a still more formidable one when removal becomes necessary. Now a little management will prevent the nuisance, and turn the affair to the best account. The cloaca and the dust-hole should always be adjoining, that the dust and ashes from the house may be spread over the surface of the former every day; bad odours are thus neutralised, and the whole contents are removed without any unpleasantness. One thing, however, must be sedulously attended to in connection with this arrangement: no slops must be allowed to find their way into this receptacle, or the object will be defeated. All liquids brought out of the house in the morning must be disposed of in another way. If you have no kitchen garden, or no meadow land, get rid of these slops by the common sewer. If you have a larger garden, or land, have some heaps of hungry soil always ready, and saturate them with the contents of the slop pail. By removing these heaps and placing others, everything will be saved, and a most efficient manure provided at small expense.

Applying Dung to Wheat.—The operations of life are on the surface of the earth, and the more plausible theory of the food of plants supposes that it is derived as much from the atmosphere as from the soil. We may also infer that new elements will be produced from the manure and the air, and which may be imbibed by plants. From these grounds I have long been of opinion that the farm-yard dung, which is now laid on the bare fallows for wheat, may be more beneficially applied as a top-dressing in March on the growing plant. At that season the soft lands would not carry the carts to lay the dung on the land; but this difficulty may be removed, by laying moveable railways on the field, along which light waggons would convey the dung to be spread from them on both sides, and which would receive the dung from the carts at the end of the field. The dung being thinly and evenly spread on the land, it may lie from one to two months, and being then harrowed, it will form a top-dressing for the plants of no common value of the minute particles of dung and soil, and a bed for grass seeds of a kind that they never receive. A matrix of different substances, in a finely-reduced and comminuted state, resembles the "alluvium" of nature, in which plants so very much delight to grow.—*J. D.*

Clay Lands.—The most economical, and by far the simplest and most generally applicable, mode of reducing the cloddy surface of clay lands, is to lay mounds of alternate layers of the rough materials and hot lime, and to ignite the heaps by exposure to the air or by the application of water. A heap of 7 yards in length, 4 in width, and 3 feet high, and mixed with 72 bushels of hot lime, has been recommended to be reduced to ashes or nearly so, when clay may be applied as long as sufficient heat remains. The damp heat exalted from the lime will produce a smothering effect on the clay, which is not easily attained in the open air, either with a large or small quantity of flaming combustibles; in the former case there is danger of calcination and uselessness, and in the latter, of imperfect burning and extinction of the fire from exposure, and the surrounding contact of air. The lime can be got at any time, and the process can go on in wet or dry weather; the means are more at the command of the farmer, and the work can be performed more promptly on

that account than when it depends on so many contingencies often beyond control. The expense of burning in heaps has been stated at 1s. to 1s. 6d. per load, and of clod burning at 12s. to 15s. an acre, but little dependance can be placed on such statements, or on the loads that are used, or on the quantity of ashes got from burning an acre of land, as they all vary according to circumstances. The quantity of ashes should be such as will cover the surface when they are spread; if the quantity be less, the application may be worth little, and a large quantity can be got at less proportional expense than a smaller. This mode of burning by lime is a very simple, an effectual, and a process at all times available, and the ultimate products are a mixture of finely reduced and pulverised substances to be blended and incorporated with the soil, on which acquisition so very much of the fertility of the earth depends.

French and English Labourers.—Few things have struck me more forcibly than the difference in the condition of the agricultural population of France and that of Great Britain—a subject to which I have already referred. I have never seen a more healthy, a better-clad, or a happier population than the French peasantry. Something may be ascribed to their naturally cheerful temperament, and something to that extraordinary sobriety, which everywhere in a remarkable degree characterizes the French people; but much more, I think, to the favourable condition in which this law, which renders attainable the possession of a freehold in the soil, places them. I am extremely averse to making any unfavorable comparisons; and I am quite aware that my judgement may be at fault; but I shall offend no candid mind by the calm expression of my honest opinion. The very poor condition of a large portion of the English agricultural laboring population must be acknowledged. The acquisition of property is, in most cases, all but impossible. The great difficulty, where there is a family, is to subsist; in sickness they have no resource but private charity or parish assistance; and they have in most cases nothing to which they can look forward when the power to labour fails them, but the almshouse.

Woman Self-degraded.—The *Morning Post* quotes, for the astonishment of its readers, the following advertisement, in the Turin *Concordia* of the 7th inst.:—"Wanted, a Nurse. The Signora Siffanti di San Bartolomeo is in want of a young, healthy wet nurse; and in order to avoid the possibility of any future loss of milk, she must be unmarried. Her services will be required for the nourishment of a small litter of five thorough-bred English spaniels; the maternal bitch having died in giving them birth. The Marchioness would stipulate, as an essential condition, that the nurse should reside in her Excellency's house. Her salary will be a hundred francs per month. She will be allowed chocolate in the morning, she will take her breakfast with the Marchioness, her dinner with the servants, and will be required to sleep with the dogs."

Blissful Ignorance.—At a late agricultural meeting the Rev. Mr. Sidney related the following anecdote;—Some years since, a kind-hearted nobleman presided at a meeting of his tenants and friends, and amongst other toasts gave "Success to Agriculture." One of his tenants rose and said, "I don't like that toast; I have been 60 or 70 years on the estate farming for myself—I am thankful to say we have never had nothing to do with agriculture, and we never will."

Leaving off Gradually.—The *S. C. Advocate* relates an amusing anecdote which occurred between a couple of Dutchmen, one of whom was much devoted to schnaps. His friend was eloquently persuading him to 'jine de dempranche,' and to obviate the terrors of coming to pure water 'of a sudden,' suggested the following expedient:—"Vell den Hannes, I dell you how you do. You go and buy un parrel viskey, and take it home, and put a foshet in it; and venefer you vant un schnap, go and traw it, and shust so much viskey ash you traw off of der foshet, shust so much vater you pour into der parrel; den you see you haf always a full parrel viskey, only d'rectly after a vile, it coome veaker and veaker, and at lasht you haf nothing put un parrel of vater; den you vant no more use for viskey, and you jine der dompranche."

AN AMBITIOUS PIG.

A curious circumstance happened here a few days since. John Bull, a thatcher, and ale-house keeper, had purchased a pig of farmer Larcomb, of Nunsford, and had driven the animal to snug quarters in a comfortable sty in the yard behind his premises. Now as the adage which says "a pig *may* fly, but it is a very unlikely bird," does not deny the *possibility*, but only discountenances the *probability* of the pig family becoming aeronauts (except a "pig" of lead manufactured into shot) the animal was perhaps desirous of testing the *possibility* of the exploit, or, it may be that as his master was a thatcher, he deemed it the duty of all his master's dependants to be as familiar with house-tops as the thatcher himself, either for the purpose of helping his owner *to* a job or *in* a job, as the case might be. At any rate the aspiring porker escaped from his den and commenced "getting up in the world," by clambering from a soil heap to a wall, and from the said wall to the roof of Bull's dwelling house, and, "mox sese attollit in auras" appeared on the apex of the ridge, tottering on to a merry grunt with as much confidence as a tight-rope dancer. From roof to roof proceeded the grunter to the unspeakable amusement of the passengers in the street, until he arrived at the end of the row of houses, of which Bull's was one; and when "the end was attained" piggy came down at a single leap, and at the expense of a dislocated shoulder; but despite this "casualty," as the modern phrase goes, he seemed determined to have have his fling when he was at liberty, and so he mended his pace to make up for a lessened number of available limbs, and bounced forward at a mad gallop, goaded onward in his headlong career by the wondering boys who set up a shout in character with the occasion. A chase was the result, and albeit it is somewhat infra dig for a *Bull* to trouble himself about so inferior a quadruped as a *pig*, yet interest is a spur not to be resisted, and thus prompted it was proved that the pace of a biped may be successfully put in competition with the "wings of a pig," for poor porcus was soon overtaken in the race, and consigned to his former habitation. As all our names, both of persons and places, were originally derived from remarkable occurrences, we should advise Bull to alter the present name of his ale-house, and set up the sign of the "Flying Pig," for certain it is he "*keeps*" the flying pig.

Preservation of Shingles.—In your paper for July, the question is asked, "how can spruce shingles be rendered durable for roofs?"

Immerse them for 48 hours in a weak solution of corrosive sublimate, (Bi-chloride of mercury;)—and they will last longer than any shingles not so prepared, of even the best kinds of wood.

This process is called *Kyanising* after the inventor, John Kyan. Most of the timbers used at the Woolwhich Dock Yard, were so prepared 25 years ago, and do not as yet show the slightest decay.

The sleepers used in the Amboy railroad, were Kyanised with a similar result. Its operation is to coagulate the sap, and thus render it insoluble, and consequently imperishable.

The cistern in which the process is conducted, should be guarded from the approach of cattle, as the solution is very poisonous.—Jas. J. Mapes. *Newark, N. J., July* 6, 1848. *Albany Cultivator.*

Compost Sheds.—Among the objects most worthy of our agriculturists' attention, are compost sheds; a cemented pit, roofed in, with walls on three sides. In this kind of shed manure may be economically manufactured, with as much industry and care as on a Flemish farm. These kinds of sheds are kept constantly filled with vegetable and animal refuse of all kinds, amongst which is mixed from time to time a bag of guano, to promote the decomposing fermentation; with the aid of liquod manure the mass is very soon converted into a highly exciting compost, and conveyed away either for immediate application, or to be preserved in a casing of soil, if no crop or ground be ready to receive it. Thus the manufacture is constantly going on, and guano, the most costly of imported fertilizers, is made to multiply its own peculiar propetties to an incalculable amount.—*Farmers Herald.*