The Vermont Farmer.

AN AGRICULTURAL AND FAMILY NEWSPAPER FOR THE RURALISTS OF THE GREEN MOUNTAIN STATE.

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Vermont Farmer

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The weather since the advent of August, has been, most of the time, wet. Those who have not finished haying are making little progress, and the elements are most unfavorable for the grain harvest. The pastures are fresh and green as in June, and rowen grows finely. There will be at present little need of the use of fodder corn, and a portion of that sowed for fall use can be saved for winter.

Many farmers are improving the time to turn over the sod in the old mowings with the intention of giving a light dressing of manure and seeding to grass. To such we would say, work over the manure until it is very fine, and spread as evenly as possible; harrow it in well and make the land very smooth before sowing the seed. Seed liberally. It is easy enough to compute the number of seeds in a peck of timothy and reckon the number to the square inch, and to draw therefrom the inference that a peck is too much. For some reason, a large per cent of grass seeds fail to germinate. Liberal seeding gives the best results. Some farmers sow half a bushel of timothy.

We have from Col Daniel Needham, secretary, Boston, the premium list of the 12th fair of the New England Agricultural Society, to be held at Manchester, N. H., Tuesday to Friday, September 7–10, next. The premiums offered are liberal, and the arrangements appear to be very perfect. Manchester is a fine location for the show. The New Hampshire State Society join in the exhibition. Mr Beecher gives the annual address. Entries of live stock must be made on or before September 1st. No entry fees required, except for trotting horses.

Henry Clark, Esq, Rutland, sends us premium list of the 25th fair of the Vermont State Agricultural Society and Wool Growers Association, to be held at Rutland, September 14 to 17. The entry fee is only one dollar which entitles the exhibitor to a ticket of admission during the fair.

Entries may be made up to 12 o'clock Tuesday, September 13th [according to our almanac Tuesday is the 14th.]

Liberal premiums are offered, and the railroads of the state will doubtless show their usual liberality in the free transportation of stock and excursion tickets at half rates.

We have from the editor, W. T. Bailey, Esq, Buffalo, N. Y., the first number (for July) of Bailey's Short-Horn Reporter. It is, as its title indicates, a journal devoted to the interests of Short-Horn breeders; a chronicle of Short-Horn transactions, and catalogue of Short-Horns for sale publicly or privately.

This is a pamphlet of 96 pages gotten up in neat, attractive style, containing a rich fund of information in Short-Horn matters in a form where it will be accessible when wanted. We regard it as a valuable addition to Short-Horn literature

Throwing Stones at Animals.

It is a common thing for people driving loose cattle or even horses and colts, to make use of stones as a means of persuading them to move along faster, or in any direction against their wills. In driving sheep, stones are a great help, and comparatively safe to use, because if thrown so as to strike on the ground near the flock they are sure to hurry in the other direction. But horses and cattle possessing less timidity than sheep, have a noble disdain of any such harmless attentions, and it is necessary to take good aim at them and to put a modicum of force into the projectile to turn them from the error of their ways. This may seem necessary at times, when they are refractory, but to throw stones in this way is to risk injury to the animals. This is especially true in regard to horses and colts. A slight blow with a stone will put out an eye or cause a blemish that spoils the selling value even if it does not cause lameness.

If a missile must be used it had better be a stick and that should be thrown with a sense of the danger of injury that may cause a pecuniary loss.

We had a lesson when a boy that will last as long as memory. Driving the cows up at night, a yearling bull did not move along fast enough, and a stone scarcely more than an inch in thickness and a little more than that in width was pitched lightly at him to urge him to hurry up. The aim was quite too true. As it struck we saw something that looked like a piece of glass drop from his eye. He shook his head and "hurried up" to our entire satisfaction. The crystalline lens which we picked up from the grass, was the first, and a decidedly unpleasant illustration of the formation of the eye, and of light, then recently a captivating study in the school philosophy. The performance of the duty of giving father a truthful account of the "interview" was not the most interesting part of the affair. He did not say as much as was expected and did not *do* anything, but the presence of a one-eyed animal on the farm and in the team for a couple of years was a sufficient punishment, and taught a lesson that no amount of talk would have accomplished.

The Relations of an Agricultural Editor to Farmers and Manufacturers of Agricultural Implements.

The agricultural editor sometimes finds himself placed in a position to test his virtue. It is very pleasant to say a good word for the implements of a house that has put the editor under a sort of obligation by liberal advertising patronage, or free "copies" of his goods "for testing."

It is evident to any person of ordinary sense and integrity that an editor can do no greater wrong than to print as editorial, or in any shape which may appear to bear his approval, compliments or comments which he does not know of his own knowledge to be deserved. Many readers rely on their paper to tell them what is safe to do. If the editor gives a good puff to a machine because he has had a present of one or a fee for writing it, and for no other reason, how long can his readers go to his columns for the advice they need?

The editor of the New England Farmer was asked by a correspondent for information as to the relative merits of two plows. The very intelligent answer given is accompanied by the statement that a plow had been sent to him by one of the manufacturers, and the following allusion to the difficulties and duties incident to the case:

It is very pleasant, as a practical farmer desirous of obtaining and using the most useful and economical agricultural implements, to be thus remembered by the manufacturers, but it is not quite so pleasant to remember that, if a good word is said for a machine or tool, through our editorial columns, the manufacturers or dealers in other machines may take us to account for relatively throwing theirs in the shade. We are also reminded of the old expression "never look a gift horse in the mouth," and wonder whether we must always speak of the horse in the presence of the giver, at least as a colt. Then, again, when we think of the great mass of farmers who take and promptly pay for their agricultural newspaper, for the purpose of being instructed upon questions like the one in the letter before us, we are forced to the conclusion that the position of an agricultural editor, like that of any other laborer, is not always particularly pleasant.

We cannot allow the New England Farmer to become a medium for indiscriminate puffing of either new or old inventions or farm implements, while we have anything to do with its direction, and we may as well say here that, however well we may be pleased by the personal favors of the manufacturers of valuable tools or machines, we should much prefer that they should send them elsewhere, unless they are willing to have them fairly and honestly tried and reported, if reported at all.

Do Agricultural Colleges Educate Men for Farming?

The wisdom of Congress in setting apart public lands for the endowment of agricultural colleges is often questioned. And the practical value to agriculture of the education given in them to young men, as conducted, is more frequently the subject of criticism. We are sensible of the difficulties which must inevitably be encountered, and look with charity as well as regret on efforts made in good faith to carry out the purpose of the framers of the law, though not always attended with success.

That a fair percentage of young men educated in some of these institutions do follow agricultrual pursuits is a matter which is beyond a doubt. Dr T. C. Abbott, president of the Michigan agricultural college, in a recent address on the subject of a liberal and scientific education for farmers and mechanics, in reply to the oft-repeated question, "Do agricultural colleges make farmers?" makes the following statement:

It has been the desire of those who manage the agricultural college to create a bias towards, and not away from the farm; to make the whole atmosphere of the place one of respect for all kinds of work, and a feeling of fellowship with farmers. To this end manual labor is insisted on from all, if we can speak of insisting on what students offer in excess of our requirements. To this end there is no furnishing of easier or more tasteful work to the seniors than is given to other students; the habit of work and taste for it is kept up to the end. To this same end the labor system and the instruction are planned to match each other, to illustrate each other, so that to the labor is given some of the dignity of scientific instruction. Labor serves as a kind of laboratory practice for instruction. The results of these efforts to create a truly agricultural school appears in the fact that in place of 1½ per cent of graduates going to farming, as from other colleges, 38 per cent, or, not counting those not living, and those who are still students, 42 per cent have gone to farming, fruit raising, and the nursery business as their chief or only business. In this respect the college is doing what has never been done before—sending men with good education in fair proportion back to work farms."

Best Time to Kill Canada Thistles.

Mr J. Olin Ingalls, of Wheelock, Vt., inquires when is the best time to cut Canada thistles in pastures to kill them.

We have had the best success by mowing them off close when in full bloom. At that time the plant is in full vigor of growth, and cutting the stem below the lowest leaf is an instant check to the circulation of sap which operates as a shock (if such a thing as the Canada thistle is susceptible of a shock). It is said that if rains fall soon after, the stem is filled with water, which tends to rot it.

Relative Value of Potatoes and Beets for Pigs.

EDITOR VERMONT FARMER:—Can you inform me through the columns of the FARMER if 100 pounds of beets are of as much value to feed to pigs as the same of potatoes?

JOHN C. THOMPSON.

Washington, Vt.

[There is a wide difference in the value of different varieties of potatoes and of beets as articles of food; one kind of potatoes having in 100 lbs a larger amount of digestible nutritive substances than another, and the same of beets. Yet we have no hesitation in saying that taking equal weights of the two, the potatoes are worth the most.

According to the tables of analysis of foods, compiled by Wolff and reproduced by Prof Atwater in his account of the results of late European experiments on the feeding of cattle, read at the last annual meeting of the Connecticut board of agriculture (see report Connecticut board of agriculture, 1874), there are in 100 pounds of potatoes, sugar-beets and turnips respectively, the following quantities, stated in pounds, of digestible organic substances:

	Albuminoids.	Carbo-hydrates.	Fats.
Potatoes,	2.1	20.6	0.3
Sugar Beets,	1.0	15.4	0.1
Turnips,	1.1	8.3	0.1

It will be observed that of digestible albuminoids, or flesh and muscle forming substances, potatoes contain a little more than twice the quantity found in sugar-beets. While of digestible carbo-hydrates, or fat and heat forming substances, the potato contains 25 per cent the most.

It is claimed that Lane's improved sugar-beets are much richer than others in digestible nutritive substances. Perhaps Hon Henry Lane can inform the readers of the FARMER how they compare in analysis and in practical use as food for animals, with potatoes. If any exact experiments have been made to test their value we would be very glad to give them for the readers of the FARMER.

When it is considered that the average product per acre of sugar-beets or turnips is so much greater than potatoes, it is an easy matter to decide which crop is most profitable to raise for stock feeding.

Prof Atwater states as a result of these European experiments, that when non-nitrogenous substances (carbo-hydrates) as starch or sugar, or easily digestible foods, containing much of these and little nitrogen, are added to crude foods as hay, straw and clover, the digestion of the latter may be decreased. And what seems paradoxical, it is not the carbo-hydrates but the albuminoids of the hay whose digestion is prevented by the carbo-hydrates. An illustration of this is found in a series of experiments by Dr Wolff at Hohenheim, in which sheep were fed with clover hay alone, and 63.7 per cent of the albuminoids and 51.2 per cent of the crude fibre were digested. In succeeding periods mixed rations of clover hay and potatoes were given, the proportion of the potatoes being increased in successive periods. The proportion of albuminoids digested from the hay in these periods was gradually reduced from 63.7 to 45.7 per cent, and that of the crude fibre from 51.2 to 43.8 per cent.

"From experiments upon the use of potatoes and turnips with hay and clover, Wolff concludes that when hay and potatoes are so mixed that the dry substance (organic substance, ash) of the potatoes is not over one-eighth of the whole dry substance of the mixture, the hay is digested as when fed alone. The decrease of digestion from the use of turnips in like proportions would be only one-half or three-fourths that produced by potatoes."

In other words the dry substance in 100 lbs of hay or clover being about 85 lbs, potatoes or turnips enough to give 12 lbs of dry substance may be fed with that quantity of hay or clover; that would be very nearly 48 lbs of potatoes or 150 lbs of turnips to 100 lbs of hay or clover.

This seems paradoxical, to be sure. It would be supposed that adding foods in which the carbo-hydrates or fat-forming substances preponderate to others of like nature in that respect, would produce such a superabundance of fat-formers, if they may be so termed, that they and not the muscle formers, would fail to be digested.

There is no present occasion for farmers to fear they are feeding roots enough to do any harm.]

Apple Pomace.

EDITOR VERMONT FARMER:—I know that you know everything, so I want you should tell me how to make a big heap of apple pomace, that has been accumulating for half a dozen years, into a fertilizer. Perhaps there are others that wish to know, but I do, sure.

S. L. FARMAN.

Claremont, N. H., Aug 9, 1875.

[Our correspondent's assumption that agricultural editors "know everything" is best refuted by the admission that we do not know the best way to make manure of apple pomace, or any way to render it of much value as a fertilizer. If we had a lot of it we would compost it with muck which has been piled up, so as to freeze over winter, using lime, at the rate of a barrel or more to a cart load of pomace, and allow it to decompose before using. It would seem as if there was too much acid in the stuff to apply to the soil in its raw state. Perhaps readers of the FARMER can give information on the subject.

Opening Hay-Cocks Early.

MR EDITOR:—Since you requested some of us farmers to experiment on opening hay I, like my friend King, have been trying the different times for opening and noting the result, and I find hay put up one day, which is partly dry, to open and dry next day and then opened at from six to seven o'clock in the morning and then stirred up a little about nine, is as well ready for the cart at half-past ten or eleven a. m. as that opened from ten to eleven, as practiced by most farmers is at two or three p. m., and I think the hay full better not to have so much of the hot afternoon sun upon it as it will in the last named time of opening, as I think so much hot sun on hay that has been in the cock makes the hay more brittle and of a weedy nature and, therefore, not near as palatable.

Mr King speaks of the size of hay cocks. My opinion is, if hay is to be put up green with expectation of its making in the cock, it should be put in small cocks, while if my hay is nearly dry the larger the cocks the better for me.

J. OLIN INGALLS.

Wheelock, Vt., Aug 7, 1875.

[We agree with our correspondent that too much hot sun on hay injures it, not only making it less palatable, but less nutritious. It is well known that the process of bleaching, which destroys the nutritive constituents, is accomplished by exposure to alternate sun and moisture.

We once bought a lot of hay at a high price which was made of sweet grasses cut early, and was very bright, and to our surprise the cows, though fed on hay made from an inferior quality of grass, refused the new hay. We learned on inquiry that the hay had been dried too much.]

Utilizing the Grass Crop.

The Live Stock Journal has the following on the best method of utilizing the grass crop. The suggestions therein may be of practical value where land bears a very high price and is mostly suited for mowing fields, and where labor is cheap. With us in Vermont, where rough, broken land, suitable only for pasturing, is abundant and cheap, and labor dear and not remarkably efficient, soiling, to any considerable extent, is out of the question. It is bad enough to be obliged to cut the food for animals six months in the year. If compelled to do it in summer, also, we should beg to step down and out as a farmer.

About three acres are devoted to pasture for one to meadow. But it is to be observed that the one acre of meadow keeps at least two-thirds of the same stock through the winter that the three acres kept through the grazing season, which shows that the pasturage is not as well utilized as the meadow. It is just here that the farmer must begin his reform. His ingenuity ought, certainly, to be equal to making the grass that grows upon an acre, and fed in warm weather, produce as great a result as the hay grown on an acre and fed in cold weather. It is too great a waste to devote three times the amount of land to summering an animal that is used in wintering the same animal, when nine animals of the same weight may be kept in summer on the same amount of food that would be required for eight in winter. Pasturing is the most wasteful of all old ways to use grass, yet the farmer goes on, year after year, throwing away a large percentage of the produce of his fields, because he has not the independence to change an old, wasteful custom.

Soiling will double his capacity to keep stock, and also largely increase his yield of grain from the extra manure made. We do not, of course, advocate soiling on rough lands which can be used only for pasturage, but there are millions of acres of grass upon tillable lands trodden down by cattle, producing less than half the net income they might if this grass was cut and fed to the animals. Every farmer who raises an acre of fodder corn and feeds to his cows or other cattle, green, in the fall, must see that this acre of green corn produces as much food as six to eight acres of pasture. We have soiled good-sized cows from the 20th of May to the 20th of November, upon a half acre, when not less than three acres would have been required to feed them equally well on pasture. The wastefulness of the general system of pasturing may be seen in the fact that throughout the dairy region two-thirds of each farm is devoted to keeping the stock through summer, and only one-third to keeping the same stock through the winter, besides raising grain to put the family through the year. We do not advocate keeping stock confined, for that is not at all necessary in the soiling system, but to give them a runway of a few acres, or the wood lot, or the broken land on the farm, and then feed them the grass in racks or in stable three times a day.

Feeding Mowing Lands.

The following advice on the subject of fall feeding mowings, from the pen of Joseph N. Startevant, and printed in the Massachusetts Ploughman, is seasonable as well as sensible:

Economy—the second thought—
Feed the cattle by the swath.

I hear it said that farmers are saving much hay this open weather; cattle manage to pick up much in the fields. Indeed, in my riding I see, sometimes, herds of cattle in mowing fields grazing the dry aftermath. For some days it is likely they may secure a third or half their support away from the hay mow. It seems to me, however, that for every mouthful of hay saved by this means, four or five good mouthfuls will be lost to the barn the coming summer. If of this you are doubtful, then consider the reasons in support of the assertion. It is assumed that the soil of your farm is light, thin, and rests upon a well drained subsoil.

The practice of manuring grass lands upon the sward, to keep the grass well, and to save the expense of plowing and hazard of reseeding, has become at least a Massachusetts custom. This custom finds its support in the belief that grass roots lie near the surface of the ground—that the rains or melting snow liquify, so to speak, the manure applied to the surface, and in the liquid form it settles in the soil sufficiently for the surface roots of the grass to be thereby nourished. We know that the most fertile layers of our farm soils are the layers near the surface. Surface-applied farm manure has its greatest strength retained in these layers. Go down three or four inches and it is found for every half inch deeper there is less fertility. Examine the plowed furrow, and the great mass of roots are not found below these few inches. What lies below this depth is very important in sustaining a growth of grass, but the larger part of the stuff of which grass is made, withdrawn from the soil, is found above. Different is it with clover, perhaps, and other deep rooted plants, and different it may be, perhaps, with grass in a clay or deep soil.

Careful experiments show that the greater portion of liquid manure applied upon the surface, does not drop through it like lead in water, to the bottom, but that it is diffused through the uppermost part of the soil. Unless grass roots, then, are conceded to be near the surface, topdressing of grass lands we must regard as an indifferent use of manure. But we know it produces results of value.

Accepting, then, these two positions, the one as to the descent of manure in the soil, and the other, as to the growth of the roots of grass another position with respect to the nature of grass will be readily accepted. That grass, unlike some species of plants, the common English grasses, does not flourish in dry soil, but requires water in abundance during the growing season, we think is every one's experience. In our dry soil, put in manure, and with a rainy season, there is a good yield of grass. But without frequent rains upon a light soil, or some means of retaining moisture in the soil, our crop fails. To have grass in perfection, demands that the farmer have a suitable soil, that the soil should be fertile, and that it shall be kept sufficiently moist. Without the last all efforts are unavailing. The thing of greatest difficulty is, to secure water to the growing crop.

What has the close feeding of our mowing fields in autumn to do with this? Some say to feed grass close, to have it meet winter in a naked condition, is to have it winter killed I fear more that it will be summer killed.

The field that meets the spring sun in this naked state, is the soonest green. The sun does this, the rain being abundant in the early spring. The early part of June, or towards the middle of the month, there is often the beginning of a draught; no showers—the roots of the grass being near the surface are soon dried—the blade slackens in growth and ripens short of a full development.

Suppose, instead of this, the fall finds a growth of, say four inches of grass—the crisp cold deadens it it—the winter snow falls upon it, and when gone leaves the dried grass flattened to the earth. The spring sun is upon this cover—half an inch of loose mulching; the blade is slow to start, nor does the thirsty sun, and more thirsty winds suck up the moisture in the soil rapidly. Why? There is this half-inch of non-conductor of heat, of cold, of moisture between it and the soil. The land receives the rain from heaven, and drinks it in—and between summer showers there is not a rapid rendering up of the water so much required. There is nothing more conducive of a retention of water in the soil than a good mulch. Nature, when let alone, kindly provides this for grass, between the time of haying and autumnal frosts. Does anything require a mulch more than grass.

The Army Worm.

AS HE HAS APPEARED IN WORCESTER COUNTY.

The potato bug has distributed himself sufficiently over our western Massachusetts fields to give the farmers a deal of bother next year; and, in the meantime, a new pest is steadily working up this way—the army worm. At Uxbridge, over an acre of Hungarian grass was stripped of leaves and seed in a single night, next followed a field of oats, etc; at Southbridge, too, sad havoc is being made. The ground, in sections, is literally covered with armies of these larvæ of the night-flying moth, *Leucania Unipuncta*; they emit an exceedingly nauseous odor, which is noticed quite a distance from the fields suffering from their ravages. Oats that have been harvested and placed in stacks are alive with worms, and are to be burned as soon as the rain will allow. They march in a regular way, myriads of them in long, deep columns, side by side, steadily, over every obstacle, wherever their food or instinct may lead them. They feed in the forenoon and evening, and may be seen scattered over fields of grain or grass, either devouring the leaves or cutting off the heads and letting them fall to the ground. They will thus eat their way across a field, apparently wantonly mowing off the heads of the grain. During their ravages in 1861, in Plymouth county, they destroyed an acre and a half of wheat in one night, and then attacked a corn field.

In dealing with this plague, the best remedy, as with all others, is of a preventative nature. If the grass lands and wheat fields are burnt over in autumn, multitudes of the moths or chrysalides will be destroyed. The natural enemies are birds and ground beetles, which collect about the rear and van of the moving army; several varieties of flies also prey upon them. The most common and probably the easiest method to arrest their ravages is that of plowing a double furrow around the field or across any part of a field that they are marching toward. It is necessary to have the steep side of the furrow next the unharmed crop, so that, when the worm attempts to climb over, it may fall back into the furrow. Running the plow once in the furrow is not sufficient; twice, and even three times is better, and it requires to be renewed if washed down by rains. If the soil is stiff or stony, the worms will climb over the steepest ridge; it is on light, friable soil only that the ridge will suffice to protect the field. The foothold of the worm must give way, thus rolling it back into the furrow; and even, under the best conditions of soil, it is best to have two furrows, one about the width of a row of corn from the other. The worms thus trapped should be destoyed, either by fire or hogs. Laying dry straw in the furrows, and then setting fire to it is a good way, for by this means the soil of the furrow is made more friable, and, of course, efficient. Thousands of army worms may be crushed in a meadow by running a heavy iron roller over it. A very small pressure is sufficient to burst their skins, and the slightest injury of this kind will kill them. If the meadow or field is level, few worms can escape the roller and thus a stop will be put to them at once. Of course this cannot succeed as well where the ground is rough and uneven, for the worms always take shelter in the hollows. The best time to roll is when the worms are feeding and up among the leaves, for then they are sure to be crushed. At other times they are sheltered, and a great number will escape. As soon as the crop is removed from an infested field, turn in all the hogs possible, and also chickens, turkeys and ducks. Sheep turned into the field will kill many of the worms by trampling upon them; and if crows and blackbirds are visiting the field they should not be disturbed, as they prefer a fat caterpillar to a grain of corn, oats or wheat. Although the appearance of these pests is not as yet general, the present is the time when they appear, and a strict watch should be kept that their approach may be discovered in season, if possible, to prevent their work of destruction.

[Springfield Republican.

Potash in Wheat.

Why is it, when growing wheat or rye is being struck with rust, that a little plot here and there where stumps, logs or brush have been burned to ashes, will be bright and free from the attack of rust? Because the growing plants employ potash and silica not only to give stiffness and rigidity to the straw, but to form, as it were, a glassy coat of mail over the surface of every leaf, glume and straw, to fortify the tender and delicate parts against the attacks of spores that are floating in the atmosphere. We all know how readily substances in the atmosphere are turned away when they come in contact with a glassy surface. Potash and sand are the essential elements of glass. The roots of growing plants have the power to employ the sharpest sand and potash to form a thin, elastic, glassy covering which is spread over the surface to exclude moisture and to repel any attacks of fungus.

[Practical Farmer.

The Charm of New or Foreign Breeds.

The editor of the New England Farmer gives expression to sentiments which it would be well for farmers to have often repeated and always heeded, when he says:

The tendency of American stock breeders and dealers seems to be to obtain something that is new, or that is supposed to be new, something different from that which is already generally known by the farmers at large. It does not satisfy their ambition to take a breed of animals and by careful breeding keep them up to a high standard, or even to improve them by judicious crosses and by intelligent systems of breeding. There is too much work about this; they want to reach the desired end by some short cut. Of course we mean those breeders and dealers who class themselves as "fancy" farmers, and who expect to make their fortune by selling stock at fancy prices. It is a little amusing to watch the progress of events in this business of breeding and selling fancy animals. At one time a chicken with a peculiar arrangement of the comb, will shake the country from the Atlantic to the Pacific, and after a few years no chicken of this peculiar breed will be allowed in a show coop unless it comes up to the standard, as regards this little matter of a comb. The knowing ones, seeing no chance to make money much longer in this direction, start a new feather of a certain shape or color on some one of the trio, and immediately a great sensation follows, and lots of money is made by those who, having been warned in season, are prepared for the rush. One of the latest sensations in the poultry line is a pea-comb on a trio of partridge Cochins, and doubtless there are already hundreds of anxious breeders ready to pay a big price for the few eggs the owner can be prevailed upon to spare of this very desirable acquisition, next spring. If the new breed can boast of a foreign origin, all the better. The word "imported" has a peculiar charm for the ear of the average American, whether it refers to a breed of cattle, sheep or poultry, or to the cloth of a coat or the shape of a hat.

The Barn-Yard.

The barn-yard may be taken as the index of the character of the farmer. As is the barn-yard, so is the farm and the farmer. It is well that all of us should remember that in this case it is no figure of speech to say that "straws show which way the wind blows." The arrangement of the barn-yard is not for show altogether. The profits of the farm depend to a great extent upon it. It is in the yard and the barns that the produce of the farm that is not sold outright is converted into beef, pork, mutton, wool or milk and butter—articles that may be more profitably sold. It is in the yard, also, that the manure is made and kept. The barn and barn-yard are the manufactory of the farm, and if they are not arranged with a view to economy, a large waste results that reduces the farmer's profit. The majority of farmers in this country, from necessity, begin business with small means, and do the best they can with the materials they possess. The excellence of farm buildings does not consist so much in the materials of which they are built, as in the use made of those materials. Useful buildings may be made of logs or prairie sods, or poles and coarse hay; and these, by skillful arrangement, may be made to serve as useful a purpose as dressed lumber and paint or pressed brick. The main points are warmth, dryness and ventilation; for food is wasted when an animal shivers in its stable, or when its health is injured by damp, filth, or bad air. A farmer who is thoughtful about such small things as this (although this is more important than it appears) may be taken to be a careful, thrifty man who, by and by, will be able to build a barn with all the improvements, and to build it properly, too. The old proverb, "take care of small things, and the large ones will take care of themselves," is applicable to matters about farms, and barn-yards especially. When the small things are well watched, large ones are not forgotten.

[American Agriculturist.

Physiology of Salt in Animal Economy.

BY PROF A. J. COOK.

Salt, or chloride of sodium, is not only found in very constant quantities in the blood, but is also present in nearly all the fluids and tissues of the body. The origin of the salt of the body is in the general food, as nearly all animal and vegetable substances contain it in minute quantities; and in the human body, that of our domestic animals, and often of the wild animals, is also taken separately, or uncombined with other substances.

The exit of salt from the body takes place through the secretions, but principally as an excretion eliminated by the kidneys. Not only the salt which comes from the breaking down of the tissues, consequent upon use, is thus eliminated, but also the surplus which may be taken in the food above what is needed.

The function of salt—for that it is very important is certainly proved by its considerable quantities in the tissues, and even greater abundance in the animal fluids—has been definitely ascertained. It is not so much to form tissue, as to preserve the consistency of organs and organize fluids, and to aid the processes. It has been shown that it is chloride of sodium, or salt, that keeps the albumen of the blood in solution, and the corpuscles in their semi-fluid condition. Hence the entire absence of salt in the food, free or combined, would be fatal to life. Again, it has been definitely settled that salt promotes absorption, as perhaps no other substance does. Again, salt acts as an appetizer in human food, a use by no means to be neglected.

Gapes in Chickens.

The editor of the Lancaster Farmer says: In a recent conversation with an experienced chicken raiser, he informed us that he had been very successful in conquering that precarious disease in his young fowls by the application of air-slacked lime. As soon as a manifestation of gapes in his fowls appears, he confines his chickens in a box, one at a time, sufficiently large to contain the bird, and places a coarse piece of cotton or linen cloth over the top. Upon this he places the pulverized lime, and taps the screen sufficiently to cause the lime to fall through. This lime dust the fowl inhales and is made to sneeze, and in a short time the cause of the gapes is thrown out in the form of a slimy mass or masses of worms, which had accumulated in the windpipe and smaller air vessels. This remedy he considers superior to any he has ever tried, and he seldom fails to effect a perfect cure. He has abjured all those mechanical means by which it is attempted to dislodge the entozoa with instruments made of whalebone, hogs' bristles, or fine wire, alleging that people are quite as certain to push the gape worms further down the throat of the fowls as to draw them up.

Forty Years Ago.

The Boston Cultivator copies the eloquent peroration on farm homes, by President Buckham, which we recently printed, and the editor remarks:

"This reminds us of the condition of farmers in the school district and town, and towns contiguous to that where we were born, some 40 years ago, when such a state of social life, now hoped for in the future by President Buckham, and at no very distant day, to a considerable extent, prevailed. Farmers' homes then were 'the abodes of industry, purity, piety and morality.' Few then left the farms for city or village life. None were very rich, and few were very poor. The winter district school comprised some 50 or 60 children and youth, for grown up boys and girls then went to school, and families usually numbered from three to seven, eight, 10, 15 children and upwards, two families in town numbering 21 each. It is not now 'the disquietude of the city,' but of the farm that prevails—nearly all seeming desirous to flee from farms to the city. Then (40 years ago) the religious society was much better supported than now. Desolation is the word for more than one-half the school districts in the aforesaid towns, as it is over the rural religious societies in the same pursuits. Where, when and how is this to end? Who can predict?"

[We hope Brother Wetherell will not, on the strength of that magnificent snowy beard and silver hair, attempt to persuade the readers of the Cultivator, for the sake of the appearance of wisdom, that he is as old as that. It is just forty years since we first engaged in agricultural pursuits, and it is certain that Brother Wetherell "was not 'round" at that remote period. We did not hear anything of him, sure; and he always makes himself heard when he is 'round.

The Value of Muck.

The New England Homestead has the following advice on the subject of muck:

The farmer who owns a good farm, and included in that farm has a good bed of muck, should consider himself extremely fortunate. He has no excuse for allowing his farm to run down. On the contrary, he ought to increase its value every year. The means are at hand for the production of large crops; also for maintaining the fertility of the soil. The muck can be easily converted into a valuable fertilizer, and it is very much cheaper than any of the commercial manures. Indeed, its cost is so small that it can almost be said to cost nothing. Merely to use for bedding, without regard to its subsequent value, it is worth, to the farmer who has it on his own land, about all it costs to get it. And after it has been used for bedding it comes out an excellent manure. When not used for bedding, but merely obtained to use as a compost, it is very valuable. Properly used it not only largely increases the quantity, but also improves the quality of the manure. To those who have never used it themselves, or observed its effect upon the land of others, this may seem like an absurd statement. Still, it is susceptible of direct proof, as those who have used it will readily testify. But it is sometimes the case that it does not prove as useful as it ought to be. This is generally owing to the fact that it has not been properly handled. Sometimes it is drawn from the field directly to the place where it is to be used for manure. We have seen men digging muck, and teams drawing it to the mowing lots as fast as it was loaded. In some cases it is dug and drawn directly to the stables to be used as bedding, or to the yards in order to go into the compost heap. But in neither of these cases is it used to the best advantage. When first dug, it is very heavy indeed. It contains a great deal of water, and is very likely to be impregnated with acids which will injure rather than benefit the plant to which the muck is applied. It is much better to dig and throw the muck into piles a year before it is needed for use. These piles should be shoveled over two or three times in the course of the year. In this way its acidity will be partially corrected, the water evaporated, and it will be both lighter to draw and better to use.

Cure for Warts.

S. F. Swift, V. S., says in the Western Farm Journal:

A cure for warts is a frequent subject of inquiry, and the question as to the mode of treatment is difficult to answer in the absence of any knowledge of the locality of the disease and the character of the growths. In good hands there is no better remedy for warts which have a broad base than white arsenic; a portion of the surface of the wart is first scraped with the knife, and the arsenic applied to the exposed surface. Ligatures are useful where the warts have constricted bases which can be readily inclosed in a loop of silk or horse hair, which must be pulled sufficiently tight to stop all circulation in the tumors.

After a ligature has been applied for some days, it commonly, from the shrinking of the part, becomes loose, in which case it is better to apply a second one than to attempt to tighten the first. When the wart falls off, the ligature, if it still remains attached to the skin, may be removed; the wound will quickly heal. Excessive granulations, which sometimes spring up, must be kept down by an occasional application of caustic. A rough plan of removing warts which hang from the skin by distinct stalks is that of grasping them by means of pincers, and literally pulling them out by the roots. The plan is not scientific,—probably it may be called cruel,—although when there are two or three warts to be got rid of, the operation only occupies as many minutes, and it is certainly very effective.

Fodder Corn.

A. L. Fish, a dairyman of Herkimer county, N. Y., says of fodder corn:

If condition of pasture does not require it to be fed while green, it is only second to early-cut hay for fall and spring feed, if matured and cut before it is killed by frost.

One cow was kept in stable two weeks and fed only fodder corn and water. She consumed 100 lbs per day of the green corn, and averaged 30 lbs per day of excellent milk. The milk was equivalent to three lbs of cheese from 100 lbs of corn, or 1080 lbs of cheese from the acre of corn. An equal amount of the same growth that was fed green, was dried and kept to be fed in the succeeding spring during the early flow of milk after parturition of the same cow, to ascertain if an equal amount of corn dried and fed would produce as much milk in the early flow of milk as green did in October preceding. But the test failed by the cow proving to be farrow. Feeding it to another cow of equal milking qualities convinced me that if dried at a proper stage of growth it will make as much milk if fed before turning to grass as when fed green in fall.

Paris Green.

Experiments at the agricultural department at Washington, by the chemist, Mr McMurtie, to determine the effects of Paris green (arsenite of copper), upon plants and the soil, are detailed in the June report of the department.

The investigations were made to determine:

1st. If applied to the soil, can arsenic or arsenious acid be absorbed and assimilated in the economy of plant growth?

2nd. If absorbed and assimilated, can it be taken up in sufficient quantity to become prejudicial or injurious to the health of consumers?

3d. If not taken up by the plant during growth, does it, by its presence in the soil, exert a poisonous influence upon the plant itself?

4th. If it exerts a poisonous influence upon the plant, to what extent may it exist in the soil before it becomes injurious?

Three series of pots, of fifteen each, were prepared and planted with carefully selected peas. In the first series quantities of Paris green, ranging from 190 milligrams to five grams, were thoroughly intermixed with the soil of each pot. The second series was treated with arsenite of potash, and the third with arseniate of potash. In each set one pot was left without any of the arsenic compound. Subsequent chemical analysis of the pea plants showed that no arsenic whatever had been taken up by the growing plant. Thus the first two questions were disposed of. The appearance of the plants proved that the presence of the arsenic compounds in the soil was injurious to the growth of the plants. With the Paris green (arsenite of copper) the plants thrived until the quantity that was present in the soil reached 500 milligrams for 91.5 cubic inches of earth, or about 900 pounds per acre, calculating for a depth of one foot. In practice, however, it is never necessary to apply so large an amount. In the case of the arsenite of potash the effect was more marked, and with the arseniate of potash still greater. Yet the experimenter calculates that 540 pounds per acre of the former, and 150 pounds of the latter might be applied without injurious results. (The investigator does not dwell upon the serious consequences unavoidably connected with the extensive use of so powerful a poison by uneducated hands, which render it most desirable that some less harmless substitute might be found.)

[Scientific Farmer.

Management of Large Bulls.

A correspondent of the Country Gentleman has the following novel method of subduing and exercising bulls:

All stock breeders know that large bulls have a perfect disregard for fences, and therefore have to be kept in the stable, sometimes for years. Experience has shown in most cases where bulls are kept so confined, without air or exercise, that they become either impotent, or very precarious stock getters, also headstrong and dangerous to handle. I kept a Short-Horn bull six years. When he was a year old, I began handling him with a rope similar to one ordinarily used to cast a horse. He would make great resistance, and after a hard struggle would have to come down. I repeated this every six months that I had him, and he never knew that he had any strength. His lofty head was leveled to the ground in a manner very humiliating to him; he was always as kind as an ox, and any child could lead him to water. Throwing him took the conceit entirely out of him.

I then invented a plan to exercise him. I set a post in the ground about three feet high, with a cart wheel on top, then lashed a 16-foot ash pole across it, made a frame for his neck at the end, so that the pole would lie against his breast with a rod running out in front to tie his strap to. He very soon learned to go round, describing a circle thirty-two feet in diameter, with a good track. He was put in this every day, and would walk two hours. After a few days he needed no attention, as he seemed to enjoy it, and was so impatient to start that we could hardly hold him still long enough to tie him.

The result of this, was that he was the most active bull I ever saw; and out of eighty-seven cows served the summer he was four years old, only four missed. Some of my stock breeding friends have tried these experiments, and say that they have been the means of prolonging the usefulness of their valuable bulls for years. We all know that far too many of our high priced and choice bulls go prematurely to the shambles in consequence of the above troubles.

Hot Water for Cabbage Worms.

We tried last year a number of remedies for the cabbage worm, an insect too well known to many persons as a voracious eater of the pulp of the leaf. The sprinkling of red pepper did well; but the