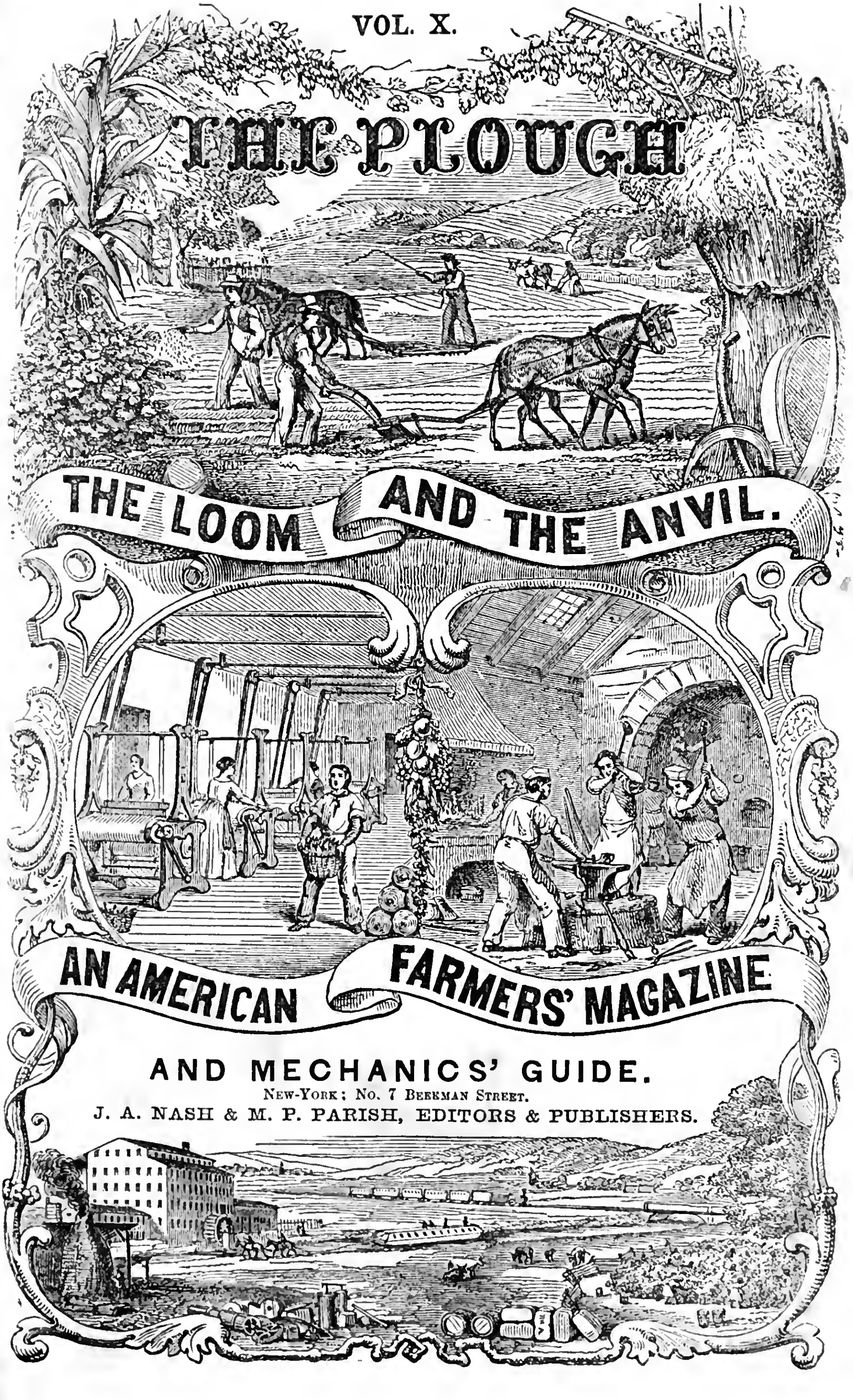
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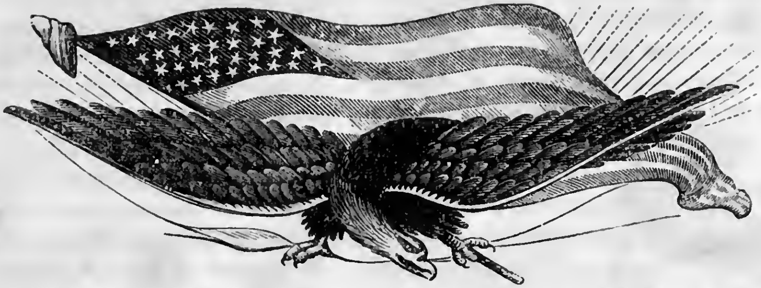



# AMERICAN FARMERS' MAGAZINE.

VOL. X. JULY, 1857. No. 1.


## Our Past and our Future.

OUR last number closed the ninth volume of this Journal. With this number commences the tenth volume. At this point it is natural to take a look at the past, and to lay our plans for the future.

*The Plough, the Loom, and the Anvil*, which we choose hereafter to designate by the shorter and to us pleasanter term of *Farmers' Magazine*, was commenced ten years ago, with less hope of pecuniary gain on the part of its then editor, as every one will believe who knew that gentleman, than with an earnest desire to make it an efficient aid to the industrial interests of our country, including the North and the South, the East and West.

But we say no more of the past. This is not an hour of parting. We confidently expect that our old subscribers will go along with us. We lay no claim to universal acquirements; but we do claim to know something about agriculture. We have learned it in the field; we have studied it in the closet; we have no fancy views which arise from the closet alone; our sympathies are with the farmer in the field; we know what his labors are; in some cases we can tell him how he can lighten them, in others, make them more productive; our zeal in the cause is deep and earnest; for, in our inmost soul, we believe that nothing, save the direct influences of Christian principle, tends so much as enlightened agriculture to work out the great problem of human advancement.

*Agriculture*, the heaven-appointed calling for two thirds of the human race—*agriculture*, not in antagonism with commerce and manufactures, but in kindly companionship with them, for without them it would droop—*agriculture*, pursued labor-savingly, so as not to stint the soul by too hard working of the body—*agriculture*, practiced on sound principles, in joint partnership of the body, the mind and the heart, the great improver of every human faculty, is destined to elevate the race—to bring man into a better relationship with his fellow-man, and nearer to his God. If, at the close of life, we can feel that we have done a little even, to advance a scientific, rational, elevated agriculture, we shall feel that we have not lived in vain.

With regard to the future it is not necessary to say much. The farmers of this country would not be taken by loud promises. We know them too well to suppose that they would; and besides, we would not so take them if we could. We regard our new vocation as too important to admit for a moment the idea of trifling with them. We believe they will try us. We have indications of this from all quarters. If we do well, they will find it out, whether we make promises or not. If we do ill, they will, as they have a perfect right, *cut* our acquaintance, and seek their agricultural instruction otherwhere. To give us a candid hearing is all we can ask. We are willing to be judged by our works. We will only say here that our desire is to carry out the original design of this work; to make it, as far as in us lies, a sound, reliable adviser in all matters pertaining to the farm, the garden, the orchard, and rural economy generally, adapted to the peculiarities of our country, as regards its soils, climate, and social institutions.

Our columns, to a limited extent, will be open for the discussion of disputed points. Mainly they will be a medium for the communication of established truths. We invite contributions from literary and scientific men, from any who feel an interest in the progress of agriculture, especially from farmers, who, better than any others, can give us facts, and from ladies, on those departments of domestic economy in which they are supposed to excel, reserving to ourselves, of course, the right of selection. All we shall claim on the score of morality, will be, to admit nothing which could, by any possibility, be interpreted as immoral. With politics and sectarianism our journal will have nothing to do. We shall strive to make it an unexceptional visitor to families of all religious and of all political creeds, *practically useful*, as a journal of agriculture and kindred arts.

It is our design to associate as extensively as circumstances permit, with those among whom we wish our journal to circulate. We think we *know* the farmers of this country. We wish to know them better. By understanding our field well, we think we can be the more useful. On a former occasion we intimated, and we here repeat, a willingness to lecture on agricultnre, to attend farmers' gatherings, and to visit farms, with a view to witness improvements, and to advise with farmers, if desired, concerning the best and cheapest modes of improvement in any particular case. Two motives induce us to say this; one that we wish, as just stated, to be better acquainted with the farmers and farming of this country; the other, that from having studied the subject of farm improvements a good deal, we believe that we could suggest modes of improvements, which, in some cases, would save much expense, and in others prevent disappointment and loss.

We mean that the articles for the *American Farmers' Magazine* shall be short, plain, easily read and comprehended. We therefore request all, who will be correspondents for it, to give us something short and to the point. If the editor should fall into the practice of writing long, prosy articles, it would only make the matter worse if others should do the same. The time for retailing the long-winded opinions of anybody and everybody who chooses to shed ink and darkness over the subjects of agriculture, is gone by. What the cause of agriculture now wants is facts, known and proved, simply and truthfully stated, with no more of the attendant circumstances than are necessary to a correct understanding of the main point.

It will be impossible for us to see many of our subscribers personally. At the price we have fixed, the sending of agents is out of the question. We therefore close this sort of prospectus, if any choose so to call it, by repeating our most earnest request, that our old subscribers will all renew their subscriptions within the present month; and may we not ask, which we would not do but from a consciousness of the goodness of our cause, that each of the old subscribers will get at least one new subscriber, or a club at the reduced price, thereby making up a sum, to be forwarded to the publishers. Should we have but our present number, we will spare no effort to make the *Farmers' Magazine* satisfactory to those who take it. But let each subscriber remember that it will cost *him* no more to be one of a large number to pay us well, than to be one of a small number to half pay us.

When in Europe, a few years ago, we observed that agricultural laborers there, who were but half paid, did not, and we suppose could not, work as well as here, where they are well paid. It is so everywhere, and in all departments of labor. We will work hard whether or no; it is our nature; if possible, we will make our journal all its patrons can wish; but, like *all* the rest of the world, we can work better and more cheerfully if we see a prospect of being reasonably compensated, by a large number of subscribers. We would scorn to be compensated by exacting a large price of few subscribers; and hence it is that we have reduced our original terms thirty-three per cent to single subscribers, and still more in favor of clubs, giving us, as we deem it, a peculiarly strong claim on our friends, and allowing us to importune them a little more urgently than would accord with nice rules of propriety, under other circumstances.—Ed.

## Worn-out Pastures too Rough to be Ploughed.

*Would Plaster Pay? Would Superphosphate? Would Ashes?*

In reply to the question from a correspondent, "Would plaster pay?" we have no hesitation in saying, Yes. If applied at the rate of one hundred pounds annually to the acre, it would more than pay—would give a handsome profit—on most of our old pastures. On other lands it would produce but little effect. Must the owners of the land therefore apply it wholly at random? Not at all. It is the easiest thing in the world to decide whether a particular pasture would be benefitted by plaster. Try it. Scatter a few handfuls here and there. If the spots where it falls become green, and clover succeeds to wire grass, then plaster may be applied without fear of loss. It is true that plaster is not sufficient of itself, as a manure. It contains but two out of ten or twelve of the ingredients necessary to crops. It would therefore be folly to hope that the continued application of plaster without other manures would be attended by good results. But it should be remembered also, that the cattle are constantly supplying other manures. Most of what they take from the soil they return to it. Supplying plaster therefore to pastures at the rate of one hundred pounds yearly, is only supplying it in a reasonable proportion with other fertilizers, a very different process from what it would be, if one should attempt to remove crops from plough lands, by the mere application of plaster.

With regard to the question, by our correspondent, whether superphosphate of lime would pay, we can not tell. We hardly know what superphosphate of lime is. We very much suspect that it is anything, and nearly everything. One thing is certain—ground bones are an excellent manure for old pastures. The result of their application is, abundant feed, sweet feed, healthy animals, inclined to grow, to lay on fat, or to give milk, as the case may be. But whether the superphosphates of commerce will pay, is more than we know. We wish that farmers would try it. Let them try it in such quantities as they can afford to lose, if the result should be unfavorable. A single cwt. spread upon a half acre, would test its value for that soil, nearly as well as a tun spread over ten acres, and yet the loss in the former case, provided no good results followed, would hurt no one.

We would say the same with regard to ashes; as our correspondent put that question also; let them be tried. Some, to our certain knowledge, have tried them on old pastures, and found them to answer well. This however does not prove that they would pay in all cases. We are of opinion that they would. Nevertheless they might fail on some pastures, while they would do well on others; and we think therefore that each farmer should experiment for himself—settle the point with regard to his own land.—Ed.

## Green Fodder.

The late Col. Pickering, in an address before the Essex County Agricultural Society, once said:

Every farmer knows how eagerly cattle devour the entire plant of the Indian corn in its green state; and land in good condition will produce heavy crops of it. Some years ago, just when the ears were in the milk, I cut close to the ground the plants growing on a measured space, equal as I judged, to the average product of the whole piece; and found that, at the same rate, an acre would yield twelve tons of green fodder; probably a richer and more nourishing food than any other known to the husbandman. And this quantity was the growth of less than four months.

It has appeared to me that the sort called sweet corn yields stocks of richer juice than the common yellow corn. It is also more disposed to multiply suckers—an additional recommendation to it when planted to be cut in a green state for horses and cattle, and especially for milch cows; and the time of planting may be so regulated as to furnish supplies of food just when the pastures usually fail. I am inclined to doubt whether any other green food will afford butter of equal quality.

Col. Pickering was wont to speak *modestly*, when others regarded him as good *authority*. Many things which *appeared* to him, years ago, as important agricultural truths, have since been proved to be such, and among others this of planting corn for green fodder. In connection with Col. Pickering's remarks, that the time of planting may be so regulated as to furnish supplies of food just when the pastures usually fail, we would inquire, inasmuch as corn stalks and leaves, well cured, are an excellent winter food for cattle, whether the time of planting could not be regulated with some reference to prospective wants of the succeeding winter. We believe that the farmer should have the general plan of the summer's campaign made out beforehand, should study in the winter, lay his plans for the season, and then carry them out in the summer. We suppose, however, there are exceptions to be made. The clover on a particular field may have failed; or it may have become apparent, in time for sowing corn, that the hay crop is going to be short. The farmer, therefore, will find it convenient with regard to certain fields, not to have his mind unalterably made up till as late as the end of June. To what extent corn fodder is destined to take the place of hay we are not certain. That it affords an excellent fall feed for dairy purposes there can be no doubt; and it is nearly ascertained that it may, on some farms at least, be profitably grown for winter fodder. Much must of course depend on the character of the farm; and something we suppose may depend upon the season; we can see no reason, why, in case of the prospect being dark at the end of June for fall and winter food, the farmer who has land fit for the purpose, should not thrust in a few acres for corn fodder, when otherwise he would not, to be fed out green in early autumn or to be cured for winter, as the case may seem to require. The merchant turns quickly in an emergency. To a limited extent, very limited we confess, and yet not so limited as to be unimportant, the farmer, for aught we can see, may do the same. We advise farmers to look at this matter.—Ed.

## Discouraging to Sugar Eaters.

"In case the intelligence of short crops in the sugar producing islands and the combinations of the speculators in all parts of the world is not sufficiently disheartening, we have the additional item that the French *Credit Mobilier* is about to purchase all the best sugar estates in the Island of Cuba. If such is the case—which, however, we believe to be a 'dodge' on the part of the sugar speculators—we may as well bid farewell to all hope of ever having any lower prices for the article. There is only one way in which we can hope to bring sugar down within sight of former prices, and that is by using less of it. Let us all study to economize in the article. We use altogether too much sweetening. We must swallow our pills without a sugar coating, make less cake, follow the example of the Chinese and drink our tea without it, give our children less poisonous candy, wait till our strawberries get perfectly ripe and let the sun do all the sweetening, dispense with preserves, in short reduce our sugar bill and at the same time shorten the doctor's prescriptions and subtract from the amount of his yearly charge. We are undoubtedly the greatest sugar consumers in the world, and many of our diseases may be attributed to the too free use of sweet food. A moderate reformation in this respect will result in a financial benefit if no other."

We did not write the foregoing, and do not know who did, but we approve it, and are the veritable perpetrator of the following.

We do not believe that the French *Credit Mobilier* is going seriously to effect the price of sugar for any long time. It is too wicked, too rotten, and too near its end to permit such a fear, unless the French *People* are more servile than we believe they are.

Whether the Sorghum Sacharatum, the seed of which Mr. Browne of the Patent-office has so meritoriously disseminated for trial, or the Imphee Africana, brought to the country by Mr. Wray, will enable the people of these United States to grow and manufacture there own sugar, or how extensively in latitude either of these will prove applicable for sacharine uses, we do not consider yet fully settled. Our hope is strong, but we think no certainty can be reached till next fall, and perhaps not as soon.

Nor, should our hopes of these exotics be disappointed, do we know whether the best sugar making can be profitably introduced among us. We know that deep ploughing, rich manuring and clean cultivation, but not expensive—such as can be done with the horse-hoe mainly—will give immense quantities, ten, twelve or fifteen hundred bushels an acre, of the sugar beet, and that few crops are more certain, or attended with less exhaustion of soil relatively with the weight of matter removed. Can the refuse be made to pay for the crop, by a proper admixture with other food for cattle? And can the juice be manufactered into sugar, so as to pay for the labor and leave a margin for profit? These are questions which we can not answer. We doubt whether they have yet been answered in our country, and yet the ought to be. American farmers are more willing to labor hardly, than to investigate patiently the great economies of their calling. But while so much is yet uncertain as regards the Sorghum, the Imphee and the beet, one thing is settled;—Maple sugar is, to say the least, as good as any other. We made and ate it freely when a boy, and hope to when an old man, if we live to that time. Ten millions worth, we believe, has been made the past year; and twice as much may be made in future years, if all the appliances are put into requisition; and a fair profit in the labor, on such prices as sugar has borne on the average for the last ten years, provided (this is an important proviso) that the owners of sugar trees will make their arrangements beforehand for doing the labor easily and evaporating the sap economically. If everything is to be got ready on the spur of the occasion, and everything done by the hardest, and most uneconomically, the farmer's boys might about as well suck their fingers after the winter school is over, and dream of sweetened ginger water without sugar in haying and harvest. But if those who have from ten to five hundred trees take our advice, they will lose nothing by it, even if the best Muscovados should be down to four cents a pound.

Construct a little sugar house, by your chip-yard if your trees are not very remote, but among the trees, if they are. Seven by ten is a good size, if at your home, and a short distance from the woodhouse. If far off, it would require to be larger, in order to afford other accommodations than merely that of a shelter to the boiler. The boiling pan may be of American sheet iron, nine feet long, two and a half feet wide and one foot deep for a hundred trees, a little larger for more, and a little smaller for less, but not varying much from these dimensions. In setting it, the bottom should be not more than ten inches from the ground. The chimney at the further end, should be high enough to create but a moderate draft. Ten feet would be better than more. The sides of the sugar house should be made to open about on a level with the top of the pan, that a current of dry air may pass over the sap, to facilitate the evaporation. One sap tub for each tree, and two for very large trees, should be provided. A sled so rigged that from one to six barrels may be fastened to it, so as not to be easily thrown off or dashed against each other, will be wanted. All these things should be provided in the fall or winter previous, when they can be prepared with the least sacrifice of valuable time. Particular directions for the tapping of trees and making and refining the sugar will be more timely after next New Year's. We will only say now, that if the sugar house is in the chip-yard, and if the work is done in conjunction with that of preparing fuel for the season, the chips and refuse wood will suffice for the boiling. Instead of consuming fuel, as in the old way of boiling in the lot between two large logs, nearly equal in value to the sugar, when made, the farmer will actually gain something by reducing his refuse wood to ashes for his land; and if the whole be done with a decent economy of time and fuel, nothing will be lost, at four cents a pound for sugar, and ten cents a gallon for syrup, whereas these articles have been worth two or three times as much the past season.

Why then should not preparation be made for drawing sap from nearly all, instead of less than half of the sugar maples? The damage to the tree is very small. It is not worth taking into the account. And why should we not have more sugar maples? There is no cleaner tree. Few are more beautiful. They bear transplanting well and grow quickly. The only objection we can think of, is, that they are of a cold nature, their roots running far, and exhausting the soil. But this is hardly an objection if they can be made to line the street, and not be too near the fields. The reward for transplanting them is not as speedy as that of planting Indian corn, to witness a golden return in three months, but where the soil favors their growth, as it does almost everywhere, the prospective return, twenty years hence, added to the beauty of the growing trees in the interval, affords a reasonable inducement for transplanting them next fall. There are 2,500,000 farmers in this country. If 2,000,000 of them should set one hundred trees each, on an average, next fall and spring, it would make a long row in the aggregate. They would be of great value twenty years hence, if sugar should be as high as now; and if better ways of sweetening our tea, coffee, and cakes, and children's tongues should come about, nothing would be lost, for the alternate trees, which might then be cut out for fuel, leaving the others for shades, would be worth as much as the whole would have cost. If any prefer fruit trees for the way side, it should be remembered that these would thrive only in select places, whereas maples will endure any degree of cold exposure, and will thrive equally well in a cold or warm loam, even if there be more rock than soil.—Ed.

## Home Fertilizers.

No topic, perhaps, tends more strongly to improvements in agriculture, than the very homely one of "fertilizing materials enough on almost every farm to convert it into a garden." We intend, at no distant day, to write largely on this subject; we have the vanity, if it be such, to believe that we can demonstrate the truth that most farms contain ample means of enriching themselves.—Ed.

## Guano.

A valuable correspondent in our last, one from whom we would gladly hear often, says: "The main business of every farmer is to save manure; (and there are fertilizing materials enough on almost every farm, to convert it into a garden;) yet there are many cases, we doubt not, where an outlay for guano would be returned, principal and interest, the first season."

His first statement is true beyond all question. *To make*, TO SAVE, and judiciously to apply manure is the great problem of farming. His second statement, as cautiously qualified by the word almost, is equally true. Few indeed are the farmers, who have not the fertilizing materials within their own limits, without money and price, except as comparatively small amounts are to be paid for the labor of collecting and composting them, to convert the farm into a garden. We hope our correspondent, W. C. G., will enlarge on these thoughts hereafter. If he can make their truthfulness as clear to all our farmers as it is to us, he will do them more good than if he could rain guano upon them. Let him demonstrate this: "There are fertilizing materials enough on almost every farm to convert it into a garden;" let him show what they are, how they are to be saved, how to be used, and what will be the effect; let him *prove*, for it can be done and he can do it, that while a just husbandry of the home fertilizers will *increase* the labor of the farm, it will *diminish* it—increase it relatively to the extent of land, but diminish it as relates to the amount of produce;—as thirty days' work on an acre, for sixty bushels of corn, is more work per acre but less per bushel, than twenty days' for thirty bushels of corn.—Ed.

## The Cranberry as an Ornamental Plant.

No plant of its size can equal the Cranberry in beauty. Its leaves of rich, dark green in summer, changed to a reddish brown in winter, remain on the plant through the year. The thread-like stalks stand erect and mat close like moss. They would form a border somewhat resembling a box, and would require only an occasional trimming off of the runners to keep them in form for years. From the last of June to the tenth of July they are in blossom, being thickly interspersed with the most beautiful transparent pale pink flowers. The flowers are succeeded, as if by magic, with the berries, at first green but soon changing to a bright crimson scarlet, covering the plant in a profusion unequaled by any other fruit having produced three bushels of berries to the square rod. The berries will remain on the vines through the year.

I may be enthusiastic, but have never seen any plant that would so soon attract attention as the cranberry plant. When in blossom, its bell-shaped flowers, suspended by a hair-like stem, almost seem the work of some fairy, and then the berries, two, three, and on some varieties five, attached by the same hair-like stem to the parent stock, itself only the fifth part of the size of a straw, excites one's sympathy lest the fruit break the parent stock, and we at once see the wisdom of their clustering so close together, thereby being enabled to bear the crimson load of berries.

If the nature of the cranberry was fully understood, it would be found in every "Country Gentleman's" yard as well as in field culture. They draw their sustenance from water, a small quantity of which is absolutely necessary to sustain the plants in a bearing condition. The air always contains sufficient moisture, and pure sand will attract and retain sufficient moisture in the proper form for the cranberry plant in any location.

We do not know who is the author of this. How could we? It comes to us in a paper which is very much in the habit of using other writers' thoughts without giving credit for them—has filled long columns with our editorials without a single recognition of their source, and we suppose does the same with those of others. This is unjust. We protest against it. It is true that some of our editorials may be no great credit to us, but we suppose that those which are worth copying are worth crediting to their author, or at least to the journal with which he may be connected. Everybody has heard how the lion's skin, once upon a time when the beasts talked and Esop recorded their sayings, found its way to the back of the wrong beast, and how the wind blew it off and showed just what the wearer of the borrowed robe was. Now there may be other winds; and the man who dresses in robes stealthily borrowed, would certainly dislike to have the world see exactly what sort of an animal he is. Fair play is the safest.

Originality in a journal is not necessarily an excellence, for article may be original and yet worthless ; nor is the *appearance* of originality, where the *thing* is wanting, honest ; for thought that is worth reading costs something, and although when once printed it becomes common property, yet no one has a right to put it on and wear it, as the king of brayers did the hide of the king of beasts, as his own. Commend us to the editor who writes *well* and selects *wisely*, and has the manliness to accredit thoughts, which he deems worth reprinting, to their originator. We know of no better reason for stealing a man's thoughts than for stealing his coat. Though in case of a stolen coat there might result a bad fit, yet there might be, and often is, a worse, in the case of stolen thoughts.

If the article to which we have appended these remarks was written by the editor of the paper containing it, why did he put on paper the very gross error, that "pure sand will attract and retain sufficient moisture in a proper form for the cranberry plant in any location ?" And if it was written by another, why did he not tell his readers, that while the article as a whole was worth considering, the last clause was a sad blunder, and so clear his own skirts of so palpable a falsehood.

One word more ;—we can hardly take up a paper, without finding an article, an item, or a mere snatch of thought, it may be of ours; something which we valued and which it seems others value, or they would not copy, going the rounds, fatherless and without a name, so far as the paper shows. Well we are not sorry for this. If they are adapted to do the least good, let them go and do it. But if the thought is worth going the rounds, it would be worth no less for carrying with it the signature of the journal in which it originated.

We are not faulting the corps editorial; it is an honorable corps; and we are proud to belong to it, and ambitious to help on its high mission for the elevation of mankind. The fault lies with only here and there a brother of the craft, more a printer perhaps than a writer, who finds a good article, fancies a plume over his head if some dunce should think it his, and so strips it of its name and sends it out as a foundling, at least to all intelligent eyes.

Other editors catch it going; like it, want it; will have it; won't credit it where they know it did not originate; and can't credit it where it did come from, because their unworthy brother of the next degree has not told them where he got it.

It is our *destiny* to stop here. We will not write another ill-natured article ; and if that implies that this is one, we take it back. It is not.—Ed.

## Application of Yard Manure.

The statement of John Johnston, of Geneva, in a late number of the *Country Gentleman*, is interesting, and it suggests some considerations in connection with known facts and experiments which are perhaps worthy of attention. It may be laid down as a universal rule, applicable everywhere, that stable manure, to be applied in the most efficient manner, should be perfectly intermixed with the soil, at precisely such a depth as the root of the plants go in search of nutriment. Perhaps the most perfect intermixture with the soil, so far as it goes, is that effected by the application of liquid manure, which becomes very finely diffused through it. But as only a portion of the manure will dissolve in water, the next mode, nearly as perfect, and more generally applicable, is to pulverize the manure finely, either by harrowing, or by grinding it down, with a "drag-roller," both of which at the same time work it into the soil. Experiments have been made, which go to show that manure completely pulverised and very intimately intermixed with the soil, will do more good than three or four times as much fresh manure left merely in lumps and plowed under without any further care. We see the reason why Johnston finds it best to leave his manure in heaps through the first summer. He harrows it into the wheat ground, which can be done much the best with rotted manure; and if the quantity of straw he uses is quite large, as is the case with all good farmers, this amount of vegetable matter enables it to hold most of the escaping gases. The proper way would be to add some sods or loam to the heaps, and it would make admirable compost by autumn. Great advantage is always derived from spreading manure on the surface in autumn, to be ploughed under in spring. All the soluble portions are washed in liquid form into the soil, and are intimately diffused through it. This advantage is so great that some good farmers prefer this practice alone to any other. Turning in the remainder which lies on the surface during the spring, improves the texture of the soil, even if all the enriching parts have been washed out; which, however, is not the case. Rules should be laid down by every farmer in the application of manure. 1. Manure should be reduced to such a condition that it will easily break up fine, and mix into the soil easily. A summer fermentation, secured from loss by intermixed sods, ditch cleanings, or loam, is unquestionably the best. 2. Manure should never be plowed under, without first having been well and finely broken up, and worked into the soil by repeated harrowings. Grinding down with a "drag roller," and harrowing often enough, will enable the farmer to mix fresh manure, as completely with the soil as rotted manure, only with more labor, yet with a smaller loss from evaporation.

The above, which we cut from the Litchfield (Conn.) *Enquirer*, affords us an opportunity of correcting what we think a common error in the minds of people in this country with regard to liquid manuring. The writer speaks of manure being but partially soluble in water. This is true; but it should be understood that the more water, the more of the manure will be dissolved; and if the proportion of water be very large, the insoluble parts of the manure, by suitable agitation, become so diffused in the water, as to secure for themselves an equal distribution, whenever the liquid manure is applied.

The thick, dark puddles in our yards, are no sample of liquid manure, in any proper sense of the term. They would kill almost any plant to which they should be plentifully applied. But let one gallon of this be diluted with a hundred gallons of rain or brook water, or let one ton of barn manure be agitated in a hundred tons of water, and it becomes the very pabulum which plants feed upon A considerable portion of it is dissolved, and the rest is so evenly diffused, that as fast as it becomes soluble, and is washed with rains, or rather diluted with rain water, it is found about every root and rootlet, just the thing for plants and in just the place.

A pound of gunpowder tea boiled in a gill of water would be neither food nor drink for the human stomach, though an ounce boiled in a gallon of water might be refreshing after a hard day's work—genial, pleasant, almost food and drink. Now plants do not require strong food. We may say, that they drink, but do not eat. Their food must not only be in solution, but greatly diluted. Hence there is wanted about their roots soluble food, or rather we should say food actually dissolved, for present use, and food all the while becoming soluble, that is, food to be dissolved with every falling rain, for future use. This is the condition of a well pulverised and well manured soil.

If now the barn manure is thoroughly mixed and agitated with water, a hundred loads of the latter to one of the former; if the liquid is then forced through a strainer, to keep back the course parts till further decayed, and is thrown upon the growing crops like rain from the clouds, the wants of the plants are supplied for the present and for some time to come. There are the soluble parts, actually dissolved, and the insoluable to be dissolved as wanted, and these last are on or near the surface, accessible to sun and air, where they will be sure to decompose in good time.

This is our idea of liquid manuring. That it is a wonderful means of increasing vegetable growth there can not be the least doubt. We have had opportunity of witnessing its results, on the farm of Mr. Mechi, the first, we believe, who ever practiced it in England, and on that of Mr. Littledale, who we think was the first to follow Mr. Mechi's example. In the former case, it was applied to a farm of 175 acres; in the latter to about one-third of a farm of 470 acres; and such was the effect, especially on the grasses, that we are half ready to believe the story, copied into our last, fishy as it seemed, of 100 tons of rye grass, grown in one year on a single acre—weighed green of course, and perhaps with as much water as would adhere to it, for if one were to swallow the story, it might require some water to wash it down.

There is no other way in which manure can be applied with anything like equal effect. Our retired merchants, with money enough, would do well to lay down the pipes, and show us a sample of what can be done. If they make a few thousand dollars, or lose a few thousand, it will not hurt them; and we should like to see on American soil a few trials of what can be done in the way of liquid manuring. We think we understand perfectly how the experiment should be made, as regards both economy and effectiveness, and should be ready at any time to communicate what we have been able to learn. But we see not how the matter can be of much immediate interest to the great body of farmers in this country; though it can not be denied that our climate, subject as it is to drougths, is far more favorable to this mode of applying manure, than that of England. But the expense! it is too great for ordinary farming.

Liquid manure, in any proper sense of the term, is too heavy to be transported, even short distances, by team power. We once suggested the idea of applying it, to certain lands favorably situated for the purpose, on the common principle, that "water runs down hill;" and we are by no means sure that on fields at no great distance from the barn, but on a much lower level, it might not be so applied advantageously. Suppose for instance you have a ten acre lot within 30 or 40 rods of the barn, but on a level 60 feet lower than the bottom of the tank. A lead two inch pipe, connected with the tank, having the end in the tank much enlarged and shielded by a strainer, might be run, say from two to three feet under ground, to the center of the field. A hydrant, placed at this point would throw the liquid manure at least thirty feet into the air; and the person, who should hold a gutapercha hose connected with it, could direct the stream upward or off at pleasure; and if the hose were ninety feet long could easily reach every part of the field, and yet give it a sufficient elevation to break the stream and cause it to fall in drops like those of a shower. There certainly would be no insuperable obstacle in the way of all this. By continuing the pipe and placing additional hydrants, without extra hose, the application could be made to other fields on the same or a lower level.

The cost of the most approved fixtures for liquid manuring is estimated in England at something like a hundred dollars an acre, but varies with circumstances, being much less on a large than on a small farm, and will undoubtedly be greatly cheapened, if it becomes common. The cost of what we have suggested would be a mere trifle in comparison. The question is, would it answer the purpose? Could a cheap mode of liquid manuring be applied to side hill, or rolling farms, by availing ourselves of the simple laws of gravitation and hydrostatic pressure? Would it pay? We do not know; and of course we would not recommend a trial, without a careful inquiry into the expenses and the prospective advantages. But we wish that some of our farmers, whose land is situated favorably for the experiment, would think of it.—Ed.

## How to Raise Potatoes.

Messrs. Editors:—I have tried several experiments in raising potatoes, which I wish to communicate for the benefit of such as are inquiring upon the subject.

1. The greatest yield I ever had, the potatoes were cultivated in the following manner: The land was ploughed and furrowed for the same; then straw was laid in the furrows instead of manure. The potatoes were cut and dropped about eight inches apart in the same upon the straw. The potatoes were then covered with a plough, about six inches deep. I have sometimes put the straw upon the potatoes; I could see no difference.

2. The second experiment was to sprinkle a handful of coal dust into each hill, either before or after the potatoes were dropped. I have seen a great effect from the use of half a pint of coal dust in the hill. I have never used muck as substitute for coal dust in case the dust could not be had, but I have recommended the practice to farmers, who have used it, they say, successfully. A quart of muck should be used in the hill.

3. My third experiment was to use a mixture of lime, plaster and ashes upon the hill, applied after the first hoeing. Or if applied twice, before and after the first hoeing. I have never applied this compost in the hill, but my neighbors have done it, and say they succeed better than to apply upon the hill. The compost might be applied to good advantage both ways. I have never known potatoes to rot where coal dust or straw was applied in the hill. The compost might also be used in case the coal or straw dust is used.

One other thing and I have done. The potato itself exhausts the soil but very little, as its elements are derived mainly from the atmosphere—but the potato top exhausts more than any other one vegetable, as its elements are derived more from the soil. Potato tops, then, should all be carefully buried when and where they are dug. If this practice were universally followed, no crop would exhaust the soil less. Let the farmers try the experiment, and write the result for the benefit of others. J. L. Edgerton, *in Country Gentleman.*

The value of such statements as the above, from practical farmers, is great. We wish our readers would send us such oftener than they do. But a question which here presents itself, is, How are farmers to make use of such statements from each other, to their mutual advantage? Because Mr. E. grew potatoes profitably on straw in the furrow, covered six inches deep, is it a matter of course that others will? From the largeness of his crop, we may pretty safely infer, what he tells us nothing of, that his land was good and the season favorable. Now we have long advocated the avoidance of nitrogenous manures for this crop. We have supposed that carbonaceous manures are less likely to be followed with the rot. Straw is of that kind. So is the charcoal and muck recommended in the second experiment. A pound or two of dry straw, two or three pounds of charcoal dust, or four pounds of well-cured peat, may be regarded as equivalents for each other. The straw would contain more potash than the peat, and perhaps not quite as much as the charcoal. All may be regarded as carbonaceous, and none as affording much of the active salts. If therefore the soil were not pretty well supplied with these, especially with potash, which the potato requires largely, it could not be expected to give a large crop without other fertilizers. If it were a very cold soil, either peaty or clayey, neither the straw, charcoal or peat would decay rapidly enough to secure a good crop.

We have been through this kind of reasoning to show how, in our opinion, farmers should use such facts as the above;—they are not to say, Mr. E. got a great crop by the use of straw and by the use of charcoal, and his neighbors got good crops by the use of muck, and therefore we shall; but they are to consider whether their land is of such a kind that, with this treatment, it would be likely to give a remunerative crop. Our own inference would be, that if we had land that is neither very wet nor very dry, and that is in medium condition, or from that to the highest, we should not have the least fear in imitating Mr. E.'s course with the straw, or with the coal dust, or that of his neighbors with the muck. With the straw, we would cover full six inches deep, as he did; with coal dust or the muck, not more than four or five; and we should have great confidence that, with a tolerably good season, if the land were in medium condition, we should have at least a paying crop, and if highly rich, a large one, and that the produce would be of fair quality.

But we would greatly prefer the third experiment above stated, because we have had occasion to know its utility. Potatoes raised with that composition are worth fifteen to twenty per cent more than the general run of potatoes—are harder, heavier, contain less water and more salts, and especially of these very salts which render them nourishing. If the composition be put into the hill, the seed should be covered rather deeply, as it is heating, and liable to prevent sprouting, if the spring be dry.—Ed.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

## Smut upon the Onion.

Messrs. Editors:—My attention has recently been called to a new manifestation of disease that threatens waste to the onion crop, so much relied on by the cultivators of this vicinity. For the want of knowledge of its *proper name*, (if the term *proper* can be applied to anything so *improper* as is this affection of the plant,) in analogy to the disease at times apparent on Indian corn, I call it *smut* or *rust.* It is noticeable on the little plant, where the leaf branches from the stem, as *a black sediment*, that can be rubbed off by the fingers. Wherever it appears it is death to the plant. On Saturday I saw half acres together, so badly affected, as to render it expedient to substitute some other crop upon the land. I learned that many of our cultivators had already sown carrots or planted corn on their onion fields, where the onion had failed to grow. This is not *a new disease* entirely, more or less of it having been apparent for the last half dozen years, but never so extensively as the present season. Whether this is to be attributed to the long-continued moist weather, with less heat than usual, I can not say; but such is the fact, the cause I know not. I witnessed these appearances on the carefully-cultivated grounds of Messrs. D. & E. Buxton, who have heretofore done much to perfect the culture of the onion, and who understand its characteristics as well as any others. They do not presume to describe it *scientifically*, making no pretension to book knowledge, but they do know when their plants advance vigorously and bottom in right form. *Guano* has been the chief fertilizer applied to their grounds the present season. They were so well pleased with its operation the last season, that an association was formed in the neighborhood, and twenty tons of best Peruvian guano obtained. They do not charge the disease to this fertilizer, for on some parts of the same field, all fertilized alike, the crop looks bright and vigorous—on others it has failed entirely.

These *modest cultivators* would be greatly obliged to you *learned professors* for any light you can shed upon this subject, and especially for instruction how their fields can be relieved of this blight of their hopes. Truly yours, J. W. P.

South Danvers, June 8, 1857.

We thank our friend and once co-laborer in the cause of agriculture, for informing us of what befalls the fields in his neighborhood. When many others do the same we may become "learned" enough to return sage advice, for all learning is derived from a comparison of simple facts. At present we will barely express a suspicion, adverse it would seem to his opinion, that possibly guano may after all have something to do with the mischief. Will friend P. *keep an eye out* this summer, and carefully compare those fields that have been dressed for longer or shorter periods with Peruvian guano, with those dressed with the old composts of sea weed, muck and barn manure. It may be that guano is safer for the wheat crop than for the onion. Wheat requires much soluble silica. One office of its ammonia is to dissolve the sand to supply silica for the straw, chaff, and coating for the seed, which is little else than a small bundle of starch and gluten neatly packed for future use in a sort of sand paper. Does the onion require such a process? We doubt it. There will be nothing like trying the effects of both kinds of manure side by side. The onion is an important crop in that region. Many a farmer there is living in a splendid house built on a foundation of onions; and if the air is redolent with the perfume of onions, it is at least as agreeable to our old-fashioned sense of smell as some perfumes that are purchased at high prices.—Ed.

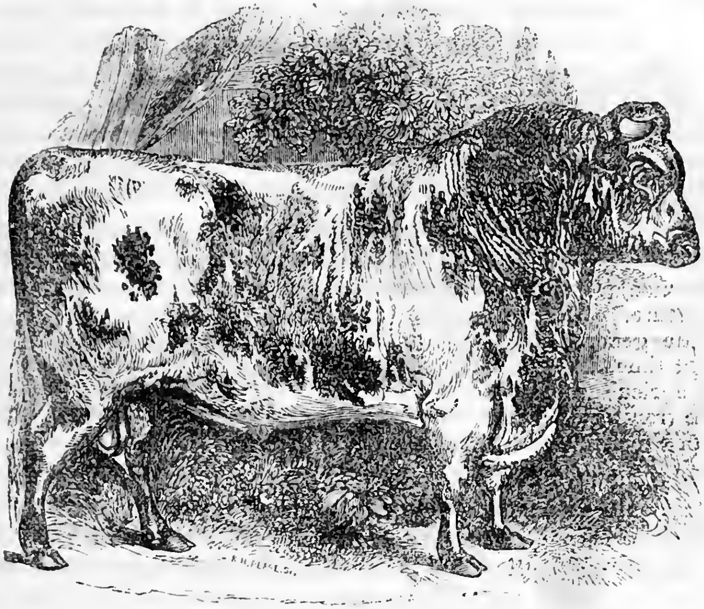
## Health of Animals—Prevention better than Cure.

Feed regularly, at stated times, never stuffing at one time and starving at another, and be particular not to overfeed. A fattening animal should have all he can eat and so digest as to have a good appetite the next time of feeding. If you can hit that point precisely, you will be a perfect feeder; but if you can not it will be safer to fall a fraction short than to go over.

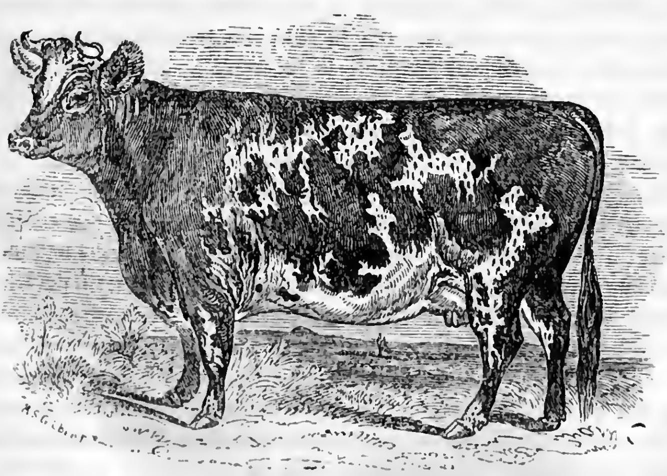
Pure water should always be within their reach, and so situated that they can approach it without fear or peril. They should always have salt *ad libitum*. A mixture of bone dust and ashes may be advantageously placed in a separate trough. The instincts of the cattle will be a safe guide with regard to the quantity required, except in case of salt when they have been long deprived of it, in which case the re-supply should be gradual.

Regularity of feeding, reasonable service, and kind care and protection when withdrawn from the yoke or harness, is the rule for working animals. There may be times when over-work would be profitable even at the risk of the animal's health, but with those who lay their plans wisely this will seldom happen; and as a general rule a reasonable amount of labor, with good feed and proper care, is more profitable than excessive labor.

Let all changes of food, as from hay to grass, or from dry fodder to roots, be gradual. It is easier to keep animals in a healthy condition by a proper attention to food and cleanliness at all times, and by special care to avoid exposure after labor or when changing their food, than to restore them after becoming diseased.—Ed.



Look at these, and think whether our suggestions in another place about getting into improved stock, either by importation or by breeding from the best of our own, are not worth attending to. We have seen cattle both at home and abroad, equally as fine as these engravings, and their keeping costs no more, perhaps less, than that of the coarser races.



## Neglect of Agriculture.

"The complaints of the present season are not caused so much by the deficiency of business as by the redundancy of traders, and the over supply of manufactured articles furnished by the improved machinery which has been brought into operation within a few years. These are altogether disproportionate to the agricultural products of the country.

"We can not look for any substantial and permanent reäction, till larger amounts of capital and a much greater number of energetic young men are withdrawn from other pursuits and concentrated upon agriculture.

"The general depression in commerce and manufactures at the present time, and the active demand and high prices for almost all great agricultural staples, offers an excellent opportunity for the profitable transfer of a large amount of capital and labor to the cultivation of the soil."—*Boston Traveller.*

Send our own manufactures to grass; buy more goods from other nations; turn all hands to the growing of agricultural produce; and in less years than a farmer has fingers and thumbs on one hand, he may whistle for a buyer, and grow fat by the music—if he can.—Ed.

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FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

## Saving Seed Corn.

In the spring of 1856, many of the farmers in this region, after having waited about the usual time for their corn to come up, found the seed defective, and were under the necessity of going through a second planting. The present cold, stormy and backward season, the same misfortune has occurred in a multiplied number of instances. This is certainly vexatious; for besides the trouble and expense of procuring new seed, and planting, it becomes a risky business in our climate, where it is desirable to have corn growing as early as possible, in order to ripen it before the early frosts of autumn, which sometimes come too soon.

The causes of failure have, to a great extent, we think, been attributed to the coldness of the earth, and the cold, humid, cloudy atmosphere—a doctrine we can not readily adopt, for so far as our own experience goes, if good seed is used, though its growth may be delayed by cold, it will not be effectually stopped. We would cite several instances of the earliest planting of the present year to sustain this view, in which the corn all, though with much delay, eventually came up well, and the blade presents a healthful appearance.

Now, as nearly as we can come at facts, these failures of seed have been found in cases where it was taken from corn cut up and stacked before it was fully matured. The cause probably was that it became heated to some extent in this premature and exposed method of ripening, and the vegetating power was destroyed, although the kernel was said to look well when planted. Too much care can not be used in selecting seed corn, not only to insure the success of the following crop, but with this care it may be improved in quality. The earlier it is gathered the better, after it reaches the proper state to germinate freely, or in other words the ears that ripen earliest should be saved for seed, and should be gathered and hung in a position where storms will never reach them, but where air will have a free circulation, until the cob becomes thoroughly seasoned. They may then be put in a barrel, but not in large bulks, for damp weather may yet cause a heating which will destroy the germinating principle. In short, to save good seed corn, select the earliest and best ears, trace them, and hang in a dry, cool room, and if it does not grow when planted, there will be other causes than poor seed or unfavorable weather, such as faulty preparation or careless planting. Yours truly,

RICHMOND, June 8, 1857. W. BACON.

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## Multum in Parvo.

*A "notion" of ours.*—If we could manufacture a journal for farmers precisely to our liking, we would have all the short, pithy articles, containing as many thoughts as words in the May, June, July, and August numbers, reserving the long and more labored ones, till farm work should become less absorbing. Without expecting however to reach our "beau ideal," we will attempt a few thoughts for the season in so few words that the working farmer can catch them at an odd moment, and digest them as he goes afield.

*A duty of yours.*—The first thing for every farmer is to improve himself, and to see that his children are growing up to adorn his own profession or any other they may choose to engage in. More than half the future Presidents, cabinet officers, men in all responsible stations, are to be grown on the farms of our country. Now, farmers and p'anters you must grow large crops; it is a great loss to only half cultivate the land. You must grow fine cattle; it would be a shame to perpetuate the scrubs. You must drive a horse to admire and not one to be ashamed of, since in the long run it will cost no more; but above all things you must grow good boys and girls, for the country wants them, it must have them, and nobody in the world is so well situated for raising them *just right*, healthy, vigorous, intelligent, incorrupt, as the farmer. Let no day go by, not even in harvest, without getting a new idea, and see to it that your children are getting new ideas and right ones. We want to say more, but you must think out the rest.

*The In-door Stock.*—In order that the farmer may always be on the road to self-improvement, that his sons may assist in his labors, not only without injury to themselves but with positive benefit, and that his laborers (for he ought to look to their good) may participate in the general welfare, the work should, as far as possible, be so laid out that every hand may do a reasonable day's work every day, and never more than a reasonable day's work in one day. This is very important. Where the farm work is skilfully bossed, to use an expressive term, the farmer himself is more at ease, has more leisure moments, can get a little time to read, can think more clearly, is less confused in his ideas, and will possess a calmer and more reliable judgment. It is so with all who work under him. The more perfectly every one understands his duty, the more easily can he do it, and the more opportunity can he get for self-improvement. Lay out the plan of the farm operations considerately; execute the plan kindly but firmly. Nothing, we know, is more difficult, yet few things are more important. The products of the farm will be greater; the profits will be increased; and what is infinitely more, every man and boy on the farm, and every member of the household will arise to a better condition in such a state of things. Our readers will forgive the homely designation at the opening of this paragraph, since we have just avowed our belief that out of such a stock will come the future Presidents and great men of the nation.

*Out-door Stock.*—Of horses, cattle, sheep, swine, poultry, etc., we suppose our readers know more than we, and better understand their interests. A word nevertheless for them to think of. If you get into a better class of horses for the road, or of horses, mules and oxen for field labor, there will be extra expense in the outset, but ever after they will do you more work in proportion to their feed, and whenever you have one to dispose of you will receive more. Is it not so? and is not the profit of fine working animals greater in the end? and is there not an innocent pleasure in seeing and using such animals? and is there not in the constant use of such animals, grateful, capable of appreciating kind usage, noble spirited, a reäction favorable to the man himself? We hardly dare broach this last thought. It will to many of our readers look like a very whim. But look at it. All the world is a school to one who has his eyes open. We verily believe that more can be learned from a majestic thunderstorm than from a tempest in a tea-pot; more from a noble, tall, wide-spread tree than from a shrub; and why not more from the driving of high bred animals in one's life, than from being constantly with those of inferior grades? The thing is not unreasonable. If we had boys growing up on a farm, we should rather they should drive the best animals than the poorest—should expect they would love them more and abuse them less, and make *likelier* men for it, other things being equal. But there are motives enough, aside from this, to encourage improvement in working animals.

The great motive with the farmer, with regard to working and all other animals will be, that after having once made the change, there will be an increased profit. But how shall the improvement be inaugurated? The generality of farmers can not well pay fabulous prices for stock to begin with. We think they should select the best of their own as breeders. More attention should be given to pairing them suitably. Select the best of each kind early; rear them in a way to produce an early and high development, of whatever the animal is capable of making. Good keeping, kind care, and suitable pairing will, in a great majority of cases, be followed with satisfactory results. The farmer who will proceed in this way, instead of selling the best of his young stock to the butcher, will soon find improved races about him. A few years will witness decided changes for the better. If he would avoid loss of time let him procure blood stock from those who have imported and are propagating it, nor should he begrudge the payment of pretty high prices, as compared with the price of common stock, since the results will soon compensate him, and especially since those among us, who have imported and are breeding fine stock are doing a good thing for the country and at a very heavy outlay.

*The House, Out-buildings, Barn.*—Don't talk about the house now, we seem to hear you say. Well, perhaps you have enough else to do. But a word about the barn, and we will let the rest go till you are more at leisure. Is it all in order? If not, look about and see what can be done before the crops are gathered in. Do that now, and leave the rest for autumn, but do not forget to have all right from foundation to ridge-pole before another winter comes. Winter in no part of our country is much to be dreaded by the farmer, if he has a warm barn and warm sheds for his cattle. It is inhuman, or at least inhumane, not to have them, in by far the largest part of our territory, and it is unprofitable in all.

*Grass for Hay.*—When shall it be cut? We say, clover, when in full blossom; herds-grass when out of blossom, but before the seed is fully ripe; other grasses, a little before they begin to dry up and become woody. The sugar turns to wood, and becomes indigestible if grass stands too long. If cut much before or much after the periods indicated, it is less valuable. Nevertheless the difference is not as great as is sometimes stated; and we say again, as we have often said, that no farmer should do more than a fair day's work, in a day, nor require his hands to do much more, for the sake of cutting his grass at precisely the best time. It comes just when the hoe crops are to attended to, and on the very eves of the wheat, rye, barley, and oat harvest, and when the flax, if that is grown on the farm, and we think it ought to be more than it is, requires to be secured. All good farmers are exceedingly anxious to get in the hay at the right time; and how to do it and not neglect other business, is a harder problem than that of the fox, the goose and the bushel of corn. Every farmer must solve it for himself. There is one a little worse than to mow too soon or too late, and that is to have hay caught in a shower when ready to go into the barn. The damage to hay, of being wet after being thoroughly dried, is considerable, in addition to the labor of drying it over again. Yet it would not be wise to pitch a load of hay in less than half the usual time even when a shower is at hand. Health is worth too much to peril by an unreasonable violent exertion. Our idea is that more men are seriously injured on the farms of this country in July than all the rest of the year. The effect follows insidiously and they are not aware what the cause was. Clover is better to lie a few hours in the swath, till the ground becomes heated, then to be turned over on the hot ground between the swaths, to be put in small tumbles towards night, these to be turned over the next morning at 10 or 11 o'clock, two to be put into one at middle afternoon, the same day, and then be let alone till pretty thoroughly dried, than to be treated, as it too often is, in a way to deprive it of nearly all its leaves, and to convert its stalk, by too much exposure to the sun, into a dry, woody and indigestible mass. As to the degree of dryness which should be aimed at, in curing clover and other grasses, much depends upon the quality of the moisture. If it is the natural juice of the grass, no harm accrues, even if it heats slightly in the mow; but if it is rain water, the effect is worse. We have always observed that a water soaked load injures the whole mow. A too green load may produce a fermentation, which we should dislike, but is not as apt to produce smut and unpleasant odor.

*Indian Corn.*—When will it get its three dressings this year? While we write (June 15) it is hardly out of the ground. Our opinion has always been in favor of giving this crop its three dressings in rapid succession so as to finish it before entering upon harvest, believing that if the weeds are well fought in June and the beginning of July, they will not become very impudent after that, and that the stirring of the ground will not more than compensate for the injury to the roots, by late cultivation. But when that work will be done this season, we suspect every man will have to ascertain for himself. We will only say that we do not believe that very late cultivation is good for this crop.

*Pastures.*—Our observations incline us more and more to the belief that permanent pastures are the true policy. This of course will depend much on the nature and use of a farm. The grain farmer, whose land is all suitable for the cereals would hardly like the idea of setting apart large portions for permanent pasturage ; and the farmer on broken land can do no otherwise if he could. In a recent trip through the Eastern counties of this State we have been highly gratified with the almost universal thrift of the farmers, and have witnessed the most striking proofs of the benefit of plaster on old pastures. Thousands of the farmers in these high, mountain regions are using it, and the quantities of milk, butter and beef coming down the Harlem road, show with with what effect ; while the style in which these farmers live shows that a good deal of money goes up the same route. It is said that plaster does not suit all land. We would not reccommend a large and indiscriminate outlay for plaster by those who have never tried nor seen it tried near them ; but we do say that the farmer who has extensive pasture lands, who goes on from year to year without informing himself by actual trial, whether fifty cents' worth of plaster to the acre would double the feed, is not true to himself. Wood ashes at twenty-five cents a bushel, or anything less, are a good investment for most pastures ; and we doubt whether there are many pastures on which it would not be good policy to put 100 pounds of plaster annually, at $10 the ton, though we believe that in many regions, it can be had for less than half that price. The good effects do not always come out the first year. Those who make the experiment, should continue it two or three years at least. We say to farmers, after observing the good effects of plaster on many farms for some twenty years, and after hearing from not a few farmers that plaster does them no good, believe nobody, take nobody's word, try for yourself, and see with your own eyes, whether or not plaster will double your feed. The question is worth settling on your own authority.

*Salt for the Extirpation of Moss.*—"It is stated to have proved efficacious during several years' trial. The salt is sowed broadcast, and in a few weeks after its application the moss (and heath) begins to wither, and shortly is destroyed ; in its place sweet grasses and nutricious plants make their appearance, and the herbage on such spots is greatly relished by cattle. It is warned not to use too much salt, else the grass itself is injured ; the proper quantity is (in English measure) four bushels per acre." So says the Journal Ag. Soc. Hanover, translated by Professor J. W. Johnson. We know nothing about it. The trial would cost little, and should be made at once. The farther from the ocean the more likely it would be to succeed.

*Saltpetre a Cure for Garget.*—J. Ellsworth, of Ann Arbor, Mich., says of a cow with swolen udder, that "I then pronounced it garget, and gave her a teaspoonful of saltpetre at night in her mess, and another dose the next night, which has cured her, and she is gaining in her milk very fast." We have seen this recommended so often and from so high sources, that it would seem as if there must be truth in it. Were a case of the kind ours, we would try half a teaspoonful, morning and night, and continue it some days, and then if a cure were not effected, perhaps would increase the quantity. Potash, whether in the form of saltpetre or saleratus, if more congenial to the soil than to the animal stomach, and if taken into the latter at all, should be taken rather as a medicine than as a part of the habitual food, whether for man or beast.

*Short-Horns.*—Mr. Thomas Willis, of Swate Ireland, obtained from a Short-horn cow: "In 1851, when 3 years old, from one week's cream, 18 lbs. butter, (16 oz. to the lb.) In 1855, when 7 years old, from one week's cream, 21 lbs. 4 oz. In 1857, when 9 years old, from one week's cream, 24 lbs. 8 oz. In the same year, the second week after calving, 24 lbs. 8 oz." In 1853 we conversed with a farmer in Berkshire (Eng.) who milked sixty Durham cows, which he said would average 1400 lbs. of beef when fattened, that he found them the most profitable dairy cows, and that a brother of his, who had milked the same number of Herefords, was fast exchanging them for Durhams, convinced that the latter were the most profitable. These facts look very much as if the Durhams, or Short-horns may be better, as milkers, than we have been wont to believe. It should be remembered however, that the feed in all these cases was that of no ordinary pastures.—Ed.

## Agricultural Improvement.

If there is an earthly object, which deserves to be compared with the higher object of cultivating the heart and amending the life in conformity with the divine requirements, it is that of improvement in agriculture. It is to point out the way, in which the tiller of the ground, by industry and reasonable labor, without excessive toil, may acquire a competency—enough for all the charities, the rational enjoyments, and the real utilities of life. But for the hope of contributing *something* towards a solution of the problem, how the farmer may be the most aimable, the most comfortable, and the most independent man in the world, never subjected to oppressive labor, always benefitted by an employment favorable to thought and reflection, rising intellectually and morally with his heaven-appointed employment, as honorable as any other man living, we should not have assumed our present relation to this paper. For the solution of the foregoing problem we shall labor with a zeal worthy of a better cause, if there is a better, which, with the exception already indicated, we doubt; for we believe that, next after teaching men, by a virtuous life and truthful doctrines, how they may enter into the kingdom of heaven, there is nothing more important to human welfare, than well devised efforts to elevate the character and to enlarge the rewards of agriculture.—Ed.

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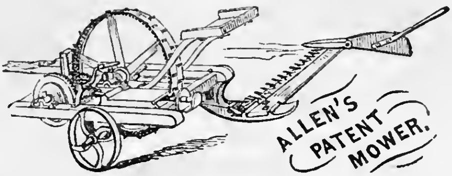


We regard mowers as especially valuable for the reason that they ease the labor of the farm at a time when it becomes oppressive. Whose mower is the best, we know not, nor have we the first earthly motive to run up or to run down any one. The above cut represents Allen's patent mower and reaper. It appears like a good piece of workmanship, and we should think it might do its work well, but we have not seen it in operation. Mr. A.'s advertisement will be seen on another page. Among hundreds who have used and recommended it, we see the names of many with whom we have been long acquainted, and whom we have been wont to regard as men of sound judgment and candor, who would not purposely recommend an article above their real opinion of its value.

Since writing the above we have visited the manufactory of A. B. Allen, in Brooklyn, where many of the implements sold by R. L. Allen, in New-York, are made. The main building is 100 feet by fifty, and five stories high. A secondary building is occupied, one hundred and thirty feet by forty. Blacksmith's shop, ninety feet by forty. Steam engine, fifty horse-power, capable of running up to seventy—runs from sixty to seventy much of the time. The machinery seemed to be of a high order; and such is the convenient arrangement of the buildings, and the system and perfect order apparently pervading the whole establishment, as would naturally inspire confidence in the character of the work to be turned out

Much depends upon the materials. An instrument made of spalt or cross-grained wood, imperfect iron and half made steel, ought never to see a farm, but to perish with the maker, instead of breaking to pieces when the farmer is in the midst of his most important work. We looked especially at this point. The timber which we saw in process of being worked (the paint not yet on) was excellent, with scarcely an exception. Of this material we claim to be a judge. Of iron and steel we know less, but from the prices which Mr. A. assures us he pays, as compared with those for inferior articles in the market, we are led to believe that he appreciates the rights of the farmer and his own interest. We say his own interests, because we believe that the sending out of implements made of spalt wood and cheap metals would operate more to his disadvantage than even to that of the buyer.

We will only add our advice to farmers to look well at the character of the material their implements are made of, and our belief that Mr. A.'s fixed purpose is to serve them well in this respect. May he get good bargains from the farmers, and they better from him.—Ed.

## Ruta Bagas.

When in the pleasant and rich farming town of Amenia, Duchess Co., N. Y., a few days since, we heard of a farmer a mile or two out of the village who was famed for great crops of Ruta Bagas. On visiting his farm we found him a modest, unassuming man, but earnest, and we think wise, in bringing up his farm to a much higher productiveness than it had been in before he had charge of it. There is nothing like turnips, he said, for increasing the manure heap; and if fed to milch cows immediately after milking, he is confident that they do not in the least injure the flavor of the milk. We became satisfied that this gentleman knows very well how to grow crops of turnips, of eight, ten or twelve hundred bushels to the acre, with as great certainty as attends most crops, without exhorbitant expense for labor and fertilizers, and consistently with leaving the soil in good heart and the best tilth. We do not believe the turnip crop as important for American as for English farmers. This gentleman does, and he certainly has a right to his opinion, has earned it, and has a better right to it than we have to ours. But we agree with him that, whether this crop is as important to us as to English farmers or not, it is certainly of very considerable importance, and we earnestly requested a statement of his mode of culture, to which we have received the following short, but very valuable reply.—Ed.

Amenia, June 11, 1857.

Messrs. Editors:

Dear Sirs:—My mode of raising ruta bagas after a corn crop, is, to plough at the same time as for oats, and harrow; then plough eight inches, and harrow twice up to time of planting; then trench thirty inches apart, and manure in the trench with twelve to twenty loads of well-rotted manure; then turn the furrows back on the trench. That leaves it in ridges. Rake the ridges off lightly. Plant last week in June or first week in July. Plant with Allen's seed drill. Then leave them till the plants are good size. Plough in a clear, warm day, with a half mold board corn plough. Turn the furrow to the plants, and if they are thick no matter if you cover them half up. Leave them about three days, and thin to six or eight inches. Plough again if necessary, or cultivate. For raising ruta bagas on sod ground, I plough when I plough for corn, seven inches deep. Harrow the same as for corn, and cultivate two or three times up to the time of planting. Sow three hundred pounds of guano per acre, cultivate and harrow in three days before planting. Plant with seed drill thirty inches apart. When the plants are large enough, plough with corn plough. Turn the furrow to the plants, not breaking the sod; thin as above, and cultivate again if necessary.

Yours respectfully, HENRY W. PETERS.

P. S.—For the want of a double mold board plough, I have not pursued the best plan. I would mark with a marker that would make six marks, and make the first one straight, then let one tooth follow the mark already made. Then with the plough above-named, I would plough in the center of the mark- Then manure if you like in the trench. Then split the ridges with the plough. *Have the rows long if possible.* H. W. P.

Will such of our readers as have long succeeded in the culture of any valuable crop give us their experience as briefly and so to the point as the above. If Mr. Peters will give us his experiments in under-draining for a future number, we are sure they will be read with interest and profit, and he shall have our thanks. Millions of acres, which now pay but a small per cent on their estimated value, would pay a large per cent on the estimated value plus the cost of underdraining, if they were underdrained at an expense of from fifteen to twenty dollars the acres.

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## Loss of Hogs by Disease.

A WRITER in a Cincinnati paper, giving an idea of the number of hogs that have died this season by cholera, states the losses at the following places, thus: In Ingraham's distillery, from the 1st of August to the 24th of October, 1285. At the distillery in Pittsburg since the 18th of October, 2566. Mr. Platte, of Rising Sun, lost 500; Mr. Slumner, of Covington, 500; Messrs. Gaff, of Aurora, 4546. At New-Richmond, since the disease made its appearance, 10,435 have died. Making an aggregate, as far as accounts have been received, of 60,000 hogs, valued at $300,000, and when fattened would have been worth $650,000.

# Horticultural.

## Black Wart in the Plum Tree.

In Bloomfield, N. J., a charming place, richly deserving its name, whence we have just returned from a brief tour among the farmers, one of our old subscribers, David Oaks, Esq., suggested that of late the cherry trees are becoming afflicted with the same black wart as the plum, and that it is caused by an insect, and that sulphur inserted in the body of the tree, while the sap is rising in the spring, is an effectual cure. That sulphur destroys a certain nameless animalcule that sometimes finds its way into the human skin, has long been known to prudent housewives. That, if inserted in the body of a tree, it should diffuse itself in the form of hydro-sulphuric acid, and thus ooze from every pore, and destroy minute insects, would not seem unreasonable.

Mr. Oaks relates that some twelve years ago he had four large plum trees, all alike afflicted with the black wart. To one of these he applied no remedy. It died in less than two years. Be bored into the other three, filled the holes with brimstone, plugged them tightly, and cut off all the diseased limbs. The consequence was that new shoots sprung in the place of the old, and the trees became flourishing, and produced eight or nine good crops of plums. It has been tried by his friends, for a less time, but successfully.

We should like to know whether others have experimented in a similar way, and with what success.—Ed.

## Setting out Cabbage Plants.

Every shower and rain during this month should be availed of to plant out cabbage plants of the various sorts that may be cultivated by you. In withdrawing the plants from the seed bed care should be observed, so as to avoid injuring the roots. A mixture should be prepared in a piggin, or other tight vessel, comprised of six parts fine mold, one part soot and one part flour of sulphur, reduced to the consistence of cream with water, and, as the plants are withdrawn from the seed bed, they should be placed up to the first series of leaves. By such care a two-fold object is gained. The mixture which adheres to the stems and roots of the plants serves as a preventive against the ravages of the cut-worm—that deadly enemy to newly set out plants, and acts as a fertilizer.

Should drouth occur after the plants are set out, the bed must be watered every evening just before sundown, until rain occurs, as it is very important that the plants should not suffer from the want of water at any period of their growth, and especially when newly set out.—*Ex.*

The *New-England Farmer* prefers planting the seeds in hills, where the cabbage is to grow. Whether this course is as favorable to the heading up process we do not know.—Ed.

## Culture of the Melon.

There is no fruit that enters so largely into the daily consumption of our people as the melon, and none that seems to be so little understood or appreciated in its culture. A fine flavored water or musk melon should not be planted within one hundred yards of any other melon, or any of the melon family. Gourds, squashes, or cucumbers should never be planted in the same garden or field with melons, for the volatile nature of the pollen of each will mix, making hybrids of the next generation, giving the melon a gourdy, squashy flavor, and softening the shell of the gourd. The melon delights in a sandy soil, and to have them in their greatest perfection, the ground should be deeply spaded or sub-soil ploughed. The hills should be about ten feet apart.

The water melon vine is very subject to injury from water; heavy and continued rains give them the appearance of having been scalded, hence the necessity of planting *on hills* instead of on a level. Holes should be excavated and filled in with well rotted manure, with a mound over the manure at least twelve inches higher in the center than on the outside; on the center of this mound, plant the seed, plant some six or eight, and when they have four leaves, thin out to three plants in a hill. As the vines begins to run, branch and bloom, pinch out the terminal bud, which will throw the whole vigor of the vine into the young fruit just set; as the fruit increases in size, take off all but one to a branch, and allow but one melon to ripen on one branch vine.

An overloaded melon vine will produce but inferior fruit. The cultivator should bear in mind that roots of melons run just as fast and that the practice of laying back the vines over the hills, is very injurious to the crop. The melon ground can not be broken too deep before the vines begin to run, but it is a positive injury to the vine for the plough to go three inches below the surface over which the vine has already run. Great care should be taken in handling the vines when working among them with the hoe. For every tendril broken or bruised on the vine, the fruit is retarded in its maturity. Keep the ground clean around the vines, and as fast as the vine elongates a branch, peg it down, so that the winds may not blow them about and break them. If the striped bug is troublesome, mix one portion of guano to two of gypsum, and dust over the vine when the dew is on—the bugs will quickly depart.

The first melons that set on the vine will mature in four weeks from the time of setting. The second settings in about three weeks. As the season advances, they will mature in less than three weeks. Fine crops of melons are made by using brush for the vines to run on, and cling to. The seed of the first melon that ripens should be saved for the next season's planting, if it grew where no other member of the melon family could impregnate it.—*Cotton Planter and Soil.*

## Floriculture.

The plants being out of the house, there need be little said at this time. The required attention is in giving water according to their different constitutions and habits. Where there is no rain or river water, it should stand at least one day in butts or cisterns, to take the chilly air from it, and become softened by the surrounding atmosphere. This is more essential to the health of the plants than is generally supposed. The small plants in dry weather will require water evening and mornings. Give regular syringings as may be required. There are frequently rains continuing for several days, which will materially injure many plants if they are not turned on their sides, or defended by sash or shutters, until the rain is over, especially small plants. The syringings should never be done till after the watering at the roots, and they should never be more seldom than every alternate evening. Turn all the plants frequently, to prevent them from being drawn to one side by the sun or light. Carefully look over them at these turnings to detect any insects, and observe that the tuberous-rooted or deciduous geraniums are not getting too much water, they being now dormant.—*Am. Farmer.*

## The Siberian Crab.

Every farmer should cultivate this beautiful fruit. A few scions inserted into the limbs of an old tree, or in small branches of young ones, will soon afford a liberal supply of fruit, which is an excellent article for preserves and tarts, and brings a high price in the market. The apples are but very little superior in size to the ordinary red cherry; the tree which is remarkably hardy, resembles the common apple tree, and is propagatd in much the same way.

As an instance of the extreme hardiness of the crab, it is asserted in one of the agricultural papers of Massachusetts, that some limbs were detatched from a tree in the spring, and after having lain exposed to the sun for six weeks, some scions were cut from them and set, and grew well. A distinguished culturist and fruit-grower, in some practical observations relating to the propation of this fruit, says:—"The scions we have set, usually blossomed the first year; and we have now ten full grown apples of this kind presented to us that grew on a scion the same season it was set. A few years since we put scions of different kinds into the same tree, and the Siberian Crab bore plentifully before the other kinds."—*N. E. Farmer.*

# MECHANICS' GUIDE.

## Recent American Inventions.

### Progress of Mechanics.

No view that we can take, illustrating the immense value of the mechanic arts to the people of this country, is more convincing or more pleasing than that of the rapid advance of large mechanical establishments in the new settlements of our Western States. We have been especially gratified with the perusal of the first two or three numbers of the CHICAGO MAGAZINE, exhibiting, among many other good things, very satisfactory evidence on this point. The third number contains several well-drawn views, (the work of their own artists) of the new city of AURORA, which, but a very few years ago was a wilderness. The first saw-mill ever built on the Fox river, upon which Aurora stands, was erected here in 1834, and it was about the same time that the attention of emigrants was first attracted to this spot. In 1835, "the first village plot" was laid out. Now the population is estimated at about 7000. But it is progress in mechanical industry to which we would invite special attention.

Three large carriage manufactories are now in operation there, one of which employs 85 hands, which are engaged chiefly on fine and common carriages, buggies and lumber wagons. Another employs 25 men, engaged chiefly in the manufacture of carriages and ploughs. The third is a carriage and wagon factory employing 18 hands. Various smaller shops are also in operation.

The Black Hawk Mills turn out about 175 barrels of flour daily. The Eagle Mills about 80 barrels, and the Aurora City Mills about 100 barrels of flour daily. The latter also contains a good saw-mill.

Here too are the buildings for the manufacture of the machinery of the Chicago, Burlington and Quincy railroad, in connection with which, not less than a quarter of a million of dollars has been expended in Aurora, and in its vicinity, in bridges, embankments, buildings, and gradings. The locomotive shop is of hewn stone, two stories high, 180 feet by 50, and employs 200 hands, who receive about \$8000 per month. The blacksmith shop is 154 feet by 50, the car-shop 234 feet by 63, carpenter shop 100 by 30, paint shop 200 by 43, oil shop 22 feet by 20, etc., etc. The area of all the flooring in these buildings is two acres. The whole number of hands employed is 335, at a cost of \$13,400 per month.

We need not add, for the foregoing necessarily presumes, that mercantile establishments are numerous and profitable. But if anything is wanting to render such an inference inevitable, it is found in the fact that schools are well patronized. An elegant building for the Clark Seminary is now in the process of construction, \$40,000 of the \$85,000 required to set the institution in operation, being already taken. Newspapers, banks, and last not least, churches, are other palpable demonstrations which speak well of the intelligence and virtue of the people.

## Artificial Stone.

We have been this day, June 19th, to the office of Mr. Hardinge, who claims to have discovered a mode of manufacturing stone, both for ornamental purposes and for building, which shall supersede the use of many natural formations, both in the fine arts and in architecture. This process also affords, as he claims, a very cheap and complete process, by dissolution, for perfectly separating the gold from quartz rock, and at a rate surprisingly cheap and expeditious.

We are well satisfied that this claim of Mr. Hardinge is well founded. We do not know, of course, the precise process by which this solution is effected, but we can see the results. We have in our possession the liquid quartz, which by a very simple and cheap process causes a deposition of the quartz, which forms about two thirds the entire liquid solution. This deposition may be used as a cement to bind into a solid mass, as in a wall or in a block of any desired shape, fragments of rocks or pebbles, making an artificial breccia, or pudding stone, the specific character and appearance of which is dependent upon the nature of the fragments or pebbles used. The liquid may also be colored, as you please, by different means, and imitations made of different kinds of precious stones or marbles. We have seen a very fair carnelian, and an agate, the chief fault of which was a lack of color. Nor is such a result so surprising, after the dissolution is once effected, for the artificial stone consists, essentially, of the same elements with these natural gems. Carnelian is 94 per cent silex, and quartz is silex almost perfectly pure, with water. Agate, opal, chalcedony, onyx, sardonyx, and many other precious stones, are almost entirely composed of the same elements. The diamond, on the other hand, is totally unlike these, being pure carbon. This liquid quartz is rapidly and cheaply procured, so that a fortune could readily be made by selling it at fifty cents a gallon. The variety of uses to which it may be applied are obviously indefinite. For busts, statues, ornamental architecture, and solid masonry of all kinds, it is just what is wanted. For water-proof walls, as in cellars, cellar floors, and for cisterns, etc., etc., we can not conceive anything more convenient. As a covering or varnish for walls of wood, brick, or stone, being applied with a brush, like paint, it would seem to furnish the most thorough coating, durable and effective, excluding all absorption of moisture, and furnishes a sort of indestructible coating even for perishable materials. No worms can eat into it. No ordinary acid, even, affects it.

And yet if the fact be as the discoverer states, that every natural locality where quartz abounds also forms in abundance the natural solvent for it, which he uses in some of his operations, there is opened a field of inquiry as to the process by which these immense mountains of quarts were deposited, and the chemical agency by which the solvent and the substance solved became separated. And again, does their proximity give us any occasion to inquire whether the solution will ever occur a second time? But we are wandering, and must return. The series on the elements of chemistry, now in hand by our Senior, may be read with increased interest, in connection with these and similar inquiries.

We are not among those who jump at once to desirable conclusions whenever some enthusiast makes claim to an important discovery or invention, but in all such investigations are cautious in our admissions. But in this instance, assuming the correctness of the statements of Mr. Hardinge, as to the cheapness of the process of solution, we can not conceive of any question in reference to the immense value of the discovery. Were it our property, we would not part with it for any amount short of that which would meet any possible wants or reasonable desires of ourself and family, on the most liberal rates of calculation. We have witnessed the process of deposition, and have seen the specimens after they have become hardened, and the practical uses to which the discovery may hereafter be applied will be multipled by every year's experience on those applications which already are so obvious. Since the above was in type it has accurred to us that this solution affords a most perfect covering for insects that are to be preserved, especially if they are to be transported a great distance. We all have seen insects imbedded in amber, presenting the appearance of life for an indefinite period. We commend this suggestion to naturalists.

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## Self-Generating Gas Light.

In our April number we gave a description of this new lamp in terms of high commendation. It is not necessary to repeat what we then wrote. Our more recent experience confirms us in the opinions then expressed. The engraving in the margin shows the different forms of the lamps and jets of flame, with their estimated cost per hour. We have not measured the quantity consumed, except comparatively, but we do not expect a brilliant light from any gas or fluid, without a more rapid consumption of the material employed than is produced by a small or dull flame. See adverment.

1½ cent per hour. 1¼ cent per hour. 1 cent per hour.

¾ cent per hour. ½ cent per hour.

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## New Brick Machine.

In the list of patents recently issued is a new brick machine, by R. R. Hasbour, of Oskaloosa, Iowa, which appears to combine practical utility with cheapness and simplicity of construction. This machine combines the circular leverage of two rotary wheels with a simple lever, thus producing a very powerful pressure by the employment of a small amount of motive power. The clay is fed into the machine and the bricks when pressed, are discharged from the mold, without the aid of hand labor. The immense amount of capital employed in the manufacture of bricks, and the fact that heretofore this branch of industry appears to have received but little aid from the introduction of machinery to facilitate the making of bricks, must render Mr. Hasbour's invention an object of interest with capitalists and builders everywhere.

## Galvanic Gas Lighter.

Broadway Theatre.—The only novelty at this house during the early part of the week, was the introduction of a galvanic gas lighter, exhibited for the first time on Monday evening. The new invention is simply the attachment to each burner of a platina tipped wire, communicating with a galvanic battery—the moment the connection is made, the platina tips become simultaneously red hot, and ignite the gas at each burner instantaneously—as a method of lighting chandeliers, etc., placed at an altitude difficult of access by the ordinary means. This application of an old invention will be found exceedingly useful.

The above item is found in *Porter's Spirit of the Times*, of May 30th. Though familiar with 2.40 operations, our accomplished co-laborer does not seem to have learned that our Boston neighbors have lighted their elegant Music Hall, by a similar process for several years. When the hall was first erected, this mode of lighting the gas was introduced for some hundreds of small burners which nearly or quite surround the entire hall.

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## Artificial Ears.

"He that hath no ears," may now buy them of the artisan. Mr. Edward Haslam, 181 Broadway, has contrived a pair of artificial ears, which can not fail to be of service to those whose hearing is partially destroyed. Those with good ears, by the use of these instruments, it is said, can hear at a greater distance from the sounding body than they can without them. The contrivance consists of an ivory tube, to be placed in the ear, connected with two auricles, with a steel spring, and a slide by which it can be adjusted to the size of the head. We commend it to the examination of those who need such helps. They cost $5.

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## Harrison's Automatic Whistle.

Any invention which diminishes the danger of "accidents" on our railroads is a public benefit of no ordinary value. Such we believe to be the invention described by our caption. Its object is to give the signal of danger independently of the engineer, on the approach of a train to a public crossing. The contrivance is attached to the locomotive, and acts by a lever and gearing connected with the driving wheels of the engine. When once arranged for a particular route, it is of course independent of the prompt action of the engineer, who has in fact no control over it. Our railway managers should adopt any invention which is well calculated to promote the safety of passengers or of the general public. It is now in operation on the Harlem, the Philadelphia Wilmington and Baltimore and the Pennsylvania Central Railroad and Central Railroad of New-Jersey, and we understand that it will probably be in operation on several other railroads in this vicinity. In our next edition we purpose to give a more particular description with an engraving.

### Broughton's Hand Seed-Planter.

Mr. Broughton has been very successful in this invention. It is scarcely heavier than a substantial walking cane, and the only motion required in its operation is to raise it from the hill last planted and to set it down at a proper distance for the next. One can plant about as many hills in a day as he can reach by walking without incumbrance. We will endeavor to give an engraving of this in a future number.

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### New Building Material.

New inventions of a practical character, and in very important departments of industry are multiplied and fast multiplying. A new material for building is now used, in Paris, it is said, consisting of a concrete, the larger part of which is ashes. Slabs are now made, seven metres long by six metres wide, (a metre being 39.37 inches,) while its strength is such that slabs of that length do not require beams or vaulting beneath them. The inventor offers to furnish all parts of a house, floors, roofs, exterior ornaments, cellars, drains, paving flags, etc., with this material, as hard as the best stone. This seems allied with Mr. Hardinge's discovery described in another place, or if different from it, the two together may lead to results of immense value.

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### Manufacture of Steel.

Experiments of scientific men, and the novel modes of producing steel lately introduced, tend pretty strongly to show that steel is not merely iron carbonized. It is possible that as in the case of animal organisms, where the small proportion of nitrogen found in muscular tissues is quite as essential as the much larger proportion of carbon. So a minute quantity of nitrogen is necessary in this manufacture. In the manufacture of steel, the presence of cyanogen seems to be very useful, and the theory is that it furnishes nitrogen to the iron. In a discussion before the Society of Arts, Manchester, England, this idea was presented, and the experiments and analyses of engineers go far to render the theory probable. Various nitrogenized substances have been used in the manufacture or tempering of steel, such as horn, shavings of leather, animal charcoal, etc., while the influence exerted by them seems not to have been understood. The old practice of using ferro-cyanide of potassium, in this process, is also worthy of note in this connection. Our readers may also remember that in a short account given by a correspondent, in our February number, of a new process used by the Damascus Steel Company, cyanogen was mentioned as one of the most important ingredients. They produce fine bar steel from crude iron in a single day. We shall watch the progress of this discussion, with more than ordinary interest.

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### Cheap Butter-Cooler.

Hard butter is a great desideratum. The *Scientific American* publishes the following, by one of its correspondents.—Ed.

"Procure a large, new flower-pot of a sufficient size to cover the butter-plate, and also a saucer large enough for the flower-pot to rest in upside down; place a trivet or meat-stand (such as is sent to the oven when a joint is baked) in the saucer, and put on this trivet the plate of butter; now fill the saucer with water, and turn the flower-pot over the butter, so that its bottom edge will be below the water. The hole in the flower-pot must be fitted with a cork; the butter will then be in what we may call an air-tight chamber. Let the whole of the outside of the flower-pot be then thoroughly drenched with water, and place it in as cool a spot as you can. If this be done over night, the butter will be as 'firm as a rock' at breakfast time; or, if placed there in the morning, the butter will be quite hard for use at tea hour. The reason of this is, that when water evaporates, it produces cold; the porous pot draws up the water, which in warm weather quickly evaporates from the sides, and thus cools it, and as no warm air can now get at the butter, it becomes firm and cool in the hottest day."

## New Steam Propeller.

A STEAMBOAT propelled upon a new principle made its appearance upon the Delaware yesterday, and attracted considerable attention. Her propeller was driven by an engine the power of which was applied direct from the engine to the propeller without intervention of a crank. The power exerted is more regular and uniform in its motion than that of the old-fashioned engine. The departure of the boat for Washington attracted a crowd of spectators at the wharf, and as she went down the river at the rate of twelve miles an hour much excitement was manifested by them at this unexpected rate of speed.

Mr. Atherton, of this city, is the inventor of this new engine, and from the interest exhibited by scientific and practical mechanics of this city, it bids fair to create as great a revolution as the original invention of the steam-engine.—*Savannah Enquirer.*

## Splitting Rocks Without Blasting.

SOME French inventors have taken out a patent in England for splitting rocks by the generation of heat without causing an explosion. They use a substance composed of 100 parts of sulphur by weight, 100 of saltpetre, 50 of sawdust, 50 of horse manure, and 10 of common salt. The saltpetre and common salt are dissolved in hot water, to which 4 parts of molasses are added, and the whole ingredients stirred until they are thorougly incorporated in one mass, which is then dried by a gentle heat in the room, or by exposure to the sun, and it is fit for use. It is tamped in the holes bored for blasting rocks in the same manner as powder, and is ignited by a fuse. It does not cause an explosion upward like gunpowder, but generates a great heat, which splits the rock.

## Engineers and Firemen.

IN a communication to the Paris Adademy of Sciences, Dr. Duchesne states that engineers and firemen on locomotives improve in health and grow stout during the first two years of their employment, but after this period a dangerous change takes place in their health. Among the earliest unfavorable symptoms are a weakening of sight, loss of hearing, and rheumatic pains, chiefly on the right side. These are followed by pain, and a difficulty of standing while the locomotive is in motion. We have never heard of American railroad engineers being affected in this manner.—*Scientific American.*

## Salt in Dyeing.

F. A. GATTY, of Accrington, England, has taken out a patent for the use of common salt (chloride of sodium) in dyeing with garancine, alizarine, and other preparations of madder. One pound of the salt is employed to every twenty-five pounds of the garancine in the boiler or a vat. The salt, it is stated, produces more beautiful and permanent colors. Some of our country dyers employ salt in coloring woolen goods black.—*Scientific American.*

# Recent Patents,

[ISSUED FROM THE U. S. PATENT OFFICE, FROM APRIL 28 TO JUNE 2, 1857.]

## Agricultural.

Reaping and Mowing Machine, Chas. Crook, New Hope, Pa.—Straw Cutter, E. G. Cushing, Dryden, N. Y.—Plough, Thos. C. Garlington, Lafayette, Ala. Bracing the beam, and securing the mold board to the stock.—Cutting and binding grain, Hiram Kellogg, McHenry, Ill.—Plough, Jackson Gorham, Bairdstown, Ga. Means of securing foot piece to the beam, and the lower end of the brace to the foot piece.—Land Fertilizer, Charles Stearns, New-York. A separation of the useful matters from the green sand marl, and also the animal matters and the super addition of ammonia.—Cotton Seed Planter, H. L. Justice, and John H. Galbreath, Goodlettsville, Tenn.—Corn Planter, John Broughton, New-York, (see p. 37.)—Seed Planter, John H. Bruen, Penn Yan, N. Y.—Corn Husker, E. F. French, Franklin, Vt. The husk is first loosened by rubbing between two aprons, and the ear is then dropt upon revolving teeth, which strip the husks which fall from the machine.—Seed Planter, John Haselton, Oxford, N. H.—Harvester, Moses G. Hubbard, Penn Yan, N. Y., (two patents.) —Press for cotton, Henry Hughes, Port Gibson, Miss.—Treating Raw Cotton, Julius C. Hurd, Medway, Mass. By bleaching, previous to picking or carding it, for removing the motes, etc.—Clearing guard of Grain Elevators, Geo. Mann, Jr., Ottawa, Ill.—Seed Planter, Charles Ketchum, assignor to C. G. Judd, Penn Yan, N. Y.—Portable Barrack, Matthias F. Branting, Sangamon Co., Ill. For protecting crops from the weather.—Cleaning Grain, J. R. Gates, Eckmansville, O.—Grain and Grass Harvesters, John H. Heyser and Edward M. Mobley, Hagerstown, Md.—Mowing Machine, Thomas Harding, assignor to Warden, Brokaw & Child, Springfield, O.—Mowing and Reaping Machine, Armery Amsden, Rochester, N. Y.—Hand Seed Planter, Silas P. Briggs, Saratoga Springs, N. Y.—Grain Scourer and Separator, Samuel Canby, Ellicott's Mills, Md.—Tongue and castor plate for Harvesting Machines, Ralph Emerson, Jr., Rockville, Ill.—Corn Planter, Robert Kuschke and Peter Merkel, St. Louis, Mo.—Cotton Cultivator, A. A. Roberts and Baldwin Davis, LaGrange, Ga.—Fertilizing compound, L. S. Robbins, Brooklyn, N. Y.—Corn Planter, T. J. Smith, Four Corners, O.—Seed Planter, Jesse Whitehead, Manchester, Va.—Mowing Machine, S. P. Briggs, Saratoga Springs.—Plough, John S. Hall, West Manchester, Pa., a plan for adjusting the draft of the beam, vertically.—Potato Digger, Isaac Griffin, Quaker Springs, N. Y.—Sowing seed broadcast, Daniel Haldeman, Morgantown, Va., an adjustible graduating bar in connection with the vibrating agitator and scatterer.—Harvesting Hemp, John B. McCormick, Versailles, Ky., for adjusting the position of the reel, and for discharging the cut hemp on the ground in gavels, no raking attachment being employed.—Atmospheric churn, Robert McCutcheon, Towanda, Pa.—Sowing Seed broadcast, A. C. Miller, Morgantown, Va.—Churn, Henry C. Nicholson, Mt. Washington, O.—Seed Planter, S. G. Randall, Dixon, Ill.—Harvester, Wm. T. B. Read, Alton, Ill.—Plough clevis, J. D. Willoughby, Pleasant Hall, Pa.—Corn Husker, J. N. Whitaker, Pecatonica, Ill.—Dressing Water Furrows in land, Jesse Whitehead, Manchester, Va.—Plough, John Ormeston, Center Township, O.

## Metallurgy.

Screw Cutting Machine, Wm. N. Adams, Olmstead, O.—Nut Machine, Richard N. Cole, St. Louis, Mo.—Door Bolt, Jeremiah M. Crosby, Norwalk, O.—Wrench, Charles Pinder, Lowell, Mass. Moving, holding and releasing the moveable jaws by a double wedge or key, etc.—Lock, Alfred Williams and Edward P. Cummings, Philadelphia.—Horse Shoes, David Cummings, Sorrel Horse, Pa. A holding plate in connection with calks, screwed into the bottom of the shoe.—Bridle Bit, Kasson Frazer, Syracuse, N. Y.—Nail Plate Feeder, J. C. Gould, Boonton, N. J.—Lock, Stuart Perry, Newport, N. Y.—Blacksmith's Striker, Hartwell Kendall, East Dorset, Vt.—Rock Drill, John D. Hope, Niagara

Falls, N. Y., assignor to G. A. Gardiner, New-York.—Rollers for journals of shafts, axles, etc., Wm. H. Main, Litchfield, O.—Spring Hinge, Dr. Joseph S. Smith, New-York.—Reducing zinc ores, Alfred Monnier, Camden, N. J. Combination of gas generator and reducing furnace.—Cutting or bending sheet metal, Elias F. Coates, Mystic Bridge, Ct. Cutting and bending sheets of tin for roofs, etc., at one operation. – Ore crushing machine, Samuel F. Hodge, Detroit, Mich.—Manufacture of iron and steel, Robert Mushet, Coleford, Eng.—Making stove pipe, M. C. Root, Toledo, O.—Ore Washer, Pierre P. Martin, Paris, France.—Door Lock, Thomas B. Atterbury, Pittsburgh, Pa.—Skates, B. W. Belson, Philadelphia.—Door Hinge, S. M. Ballard, Hollister, Mass. A detached anti-friction roller, inserted between two inclined planes.—Lock, Julius M. Cook, Hinsdale, Pa.—Manufacturing screws, John L. Mason, New-York.—Machine for making shovels, D. B. Rogers, Pittsburgh, Pa.—Die Stock, J. L. Shaver, New-York.—Door Bolt, Amos Wescott, Syracuse, N. Y.—Same, S. B. Wilmot, assignor to S. B. Guernsey, Watertown, Conn.—Die for punching fork tines, L. S. White, Hartford, Conn., assignor to S. S. Rogers, E. W. Spering, J. H. Ashmead, and E. Hurlbut, of do.

### Manufacture of Textiles.

Sewing Machine, Bryan Atwater, Berlin, Ct. A chain stitch made by a single thread.—Loom for weaving pile fabrics, Erastus B. Bigelow, Boston, Mass.—Picker motion for looms, Samuel Boom, Lowell, Mass.—Printing subscribers' names on newspapers, Stephen D. Carpenter, Madison, Wis.—Napping cloth, John C. Miller, Starracca, Pa., and C. N. Tyler, Washington, D. C. Arrangement of two or more napping cylinders, and teazling disks, in combination, etc.—Turning the edges of cloth, J. P. Marston, Charlestown, Mass.—Pocket Safe, G. R. McIlroy, Covington, Ky.—Coupling for Shafting, William and Coleman Sellers, Philadelphia.—Ladies' skirts, H. C. Traphagen, New-York. A series of air tight tubes to expand the skirt.—Combing wool, Cullen Whipple, Providence, R. I.—Cylinder for printing fabrics, R. F. Sturges, Birmingham, Eng.—Clothes Pounder, Sardis Thompson, West Otis, Mass.—Stitch for Sewing Machines, Chas. F. Bosworth, Petersham, Mass.—Hook Temples for Looms, Warren W. Dutcher and Geo. Draper, Milford, Mass.—Needles for sewing, Benjamin Garvey, New-York. A sewing needle having a self-closing eye, with a slit leading outwardly, and made to terminate at a point more or less remote from the eye, through which slit the thread may be forced into the eye.—Hemp Brakes, J. L. Hardeman, Arrow Rock, Mo.—Soap substitute for scouring woolens, Louis Wilman, Worcester, Mass. Composition of soda, ash, salt and bran.—Preparing canvass for printing, painting, etc., Elisha Lee, Baltimore, Md. Composition used without sizing the canvas.—Copying Press, Wm. M. Smith, assignor to himself and Peter Ranney, Washington, D. C.—Binding Books, A. H. Rowland, Alleghany, Pa.—Cordage Machine, Jas. P. Arnold, Louisville, Ky. A series of pullies revolving each on its own axle, and round a common center, with a ring concentric to said circle of revolution whose surface adjacent to the pullies is elastic, and forms a track for the pullies to roll on, etc.—Treating straw braid for hats, etc., Geo. Cornwall, 2d, Milford, Conn. A method of stretching, beveling and curving the braid, before done by hand.—Blanket and Calico Printing Machine, John Fallow, Lawrence, Mass. Combination of the short India-rubber blanket with the multiple fold of "gregs" passing once through the machine.—Shuttle motion for loom, Levi Ferguson, Lowell, Mass.—Dressing Sewing Thread, etc., J. D. Minder, Killingly, Ct. Mode of arranging and operating brushes, and obviates the use of a blower.—Folding paper, Edward N. Smith, Springfield, Mass., assignor to Steuben T. Bacon, Boston, Mass.—Loom, N. B. Carney, assignor to J. B. Livingston, C. H. Haswell, and R. C. Root, of New-York —Stencial plate printing, Samuel F. Sanford, Fall River, Mass.—Sewing Machine, Solomon B. Ellithrope, New-York. —Registering apparatus for printing presses, Gordon McKay, Boston.—Loom, Wm. H. Howard, Philadelphia.—Reel for yarn or thread, Christian Knauer, Pittsburgh, Pa.—Sizing composition, John Leigh, Manchester, Eng.—Making paper pulp, M. A. C. Mellier, Paris, France.—Sewing Machine, T. S. Wells, Utica, N. Y.—Loom, Franklin Painter, assignor to the Nashua Wannock Manufacturing Co., East Hampton, Mass.—Printing Press, S. D. Learned, Boston, assignor to A. C. Learned, New-York.—Sleeve Fastener, Wm. A. Bates, Boston, Mass.—Fastening for garments, Jeremy W. Bliss, Hartford, Conn.—Sewing Machine, James E. A. Gibbs, Millpoint, Va.—Filing Saws for cotton gins, J. T. Turner, Bridgewater, Mass.—Pickers for Looms, T. J. Mayall, Roxbury, Mass.

### Chemical Processes.

Purifying Gutta Percha, Robert Haering, New-York. By means of ether and alkali.—Blasting Powder, Antoine Murtineddu, Marseilles, France.—Devulcanizing India-rubber, Conrad Poppenhusen and Ludwig Held, Brooklyn, N. Y.—Projectile, Christopher C. Brand, Norwich, Ct. An improved fuse tube and manner of making it.—Gunpowder, Lammot Dupont, Wilmington, Del.—Lantern and oil can, Wm. G. Russell, assignor to himself and Wm. Sewell, New-York. The attachment of a light to an oil can for illuminating the place to be oiled.—Electro-Magnetic fire alarm telegraph, for cities, Wm. F. Channing, Boston, and M. S. Farmer, Salem, Mass., assignors to said W. F. C.—Feeding Gas Generators, C. B. Loveless, Syracuse, N. Y., improvement in Portable Gas Apparatus.—Condensing vapors and gasses, for evaporating liquors, A. F. W. Partz, New-York.—Wood Gas Generator, C. F. Werner, New-York.—To prevent counterfeiting bank notes, etc., C. D. Seropyan, New-York.

### Calorifics, Gas Lights, Lamps, etc.

Close or Open Stove, Henry Seitz, St. Mary's, Va.—Heating and cooking by gas, R. Snowden Andrews, Baltimore, Md.—Roasting meat, John G. Brown and John P. Derby, South Reading, Mass. A new article for this purpose, consisting of a pan with handles, ratchet wheel, etc.—Coal Stove, John C. Keller, Philadelphia. New arrangement of draft and current.—Heating soldering tubes by gas, J. H. Stimpson, Boston, Mass.—Gas Generator, James A. Bruce, assignor to Maryland Portable Gas Co., Baltimore, Md. A new gas retort, with smoke attachment, admitting atmospheric air to clean the retort and purifying material by combustion.—Gas Regulator, Robert Cornelius, Philadelphia.—Griddles, Wm. Bennett, New-York.—Cooking Stove, Joseph Hackett, Louisville, Ky.—Sugar boiling apparatus, Adolph Hammer, Reading, Pa.—Cooking Range, Charles J. Shepard, Brooklyn, N. Y.

### Steam Engines, etc.

Stuffing boxes, N. R. Bates, New-York. An annular plate, adjusted by screws, as the stuffing wears away.—Heating feed water apparatus for locomotives, Peter S. Ebbert, Chicago, Ill.—Locomotive Engine, Horace Gray, Boston, Mass.—Directing the exhaust of locomotives, Robert Hale, Roxbury, Mass.—Metal packed pistons for steam engines, Geo. W. Cotton, St. Louis, Mo.—Semi-rotative steam-engine, C. B. Gallagher, Alleghany City, Pa. Means for producing continuous rotary motion from the semi-rotative piston of the engine.—Boring flue sheets of steam boilers, Sylvanus V. Lowe, Reading, Pa.—Safety valves within steam boilers, Geo. P. Clark, assignor to himself and Wm. M. Little, Newark, N. J.—Therma-Pneumatic Safety Valve, S. H. Whitaker and Ezra Cope, Cincinnati, O.—Packing pistons and stuffing boxes of steam engines, Patrick Clark, Rahway, N. J. The foil or plastic metal packing—Steam pumping apparatus, George R. Corliss, Providence, R. I. The arrangement of a series of steam cylinders and pumps combined radially around a central crank shaft, with a central crank and crank shaft, with which the whole series of pumps and steam cylinders are connected. Also, the method described of forming the connection between the pistons of a series of cylinders and a single crank pin, by means of a disk-ended connecting rod, and which is appropriated to one piston in the series, and which is fitted with a series of pins, to which the remaining connecting rods of the series of cylinders are applied, thus obviating the direct application of all the connecting rods in the series to the same crank pin.—Locomotive Boiler, J. E. McConnell, Wolverton, Eng.—Water Guage for steam boilers, D. E. Rugg, assignor to D. N. Force and D. E. Rugg, New-York.

### Navigation and Maritime Implements.

Boats for duck shooting, Robert Bogle, Rock Hall, Md.—Ice cutting attachments to vessels, Thomas Estlack, Philadelphia, Pa.—Ship's hawse holes, R. R. Osgood, assignor to Jason C. Osgood, Troy, N. Y.—Propeller Blade, George Hibsch, Buffalo, N. Y.—Submarine Excavator, Wm. Kennish, Brooklyn, N. Y.—Indicating the speed of vessels, and depth of water, David Hinman and F. B. Fournier, of Berea, O., assignors to themselves and R. I. Parker, Ogdensburg, N. Y.—Reeffing Topsails, Jas. E. Cole, New-York.—Bomb Lance, Julius Grudchos and Selmar Eggars, New-Bedford, Mass.—Apparatus for examining vessels, keels, James E. Simpson, Boston.—Projectile for killing whale, Rufus Sibley, assignor to C. C. Brand, Norwich, Ct.

### Civil Engineering and Architecture.

Vault Cover, John B. Cornell, New-York, (two patents.)—Door sill and strip, Henry Tryon, Steuben, Pa.—Blind Fastenings, Horace Vansands, Middletown, Ct.—Stair steps, Charles Robinson, Cambridgeport, Mass. A spring or springs beneath each step, so as to give an elastic movement.—Fastening sheet metal on roofs, etc., Asa Johnson, Cairo, N. Y., assignor to himself, Wm. Higbee, and Henry Link, Little Falls, N. Y. A self adjusting fastener, admitting contraction and expansion.

### Land Conveyance.

Adjustable pole for carriages, Sherlock H. Bishop, Orange, Ct.—Transmitting motion, Mathaus Kaefer, Alexandria, Pa. A balance wheel, the momentum of which moves the carriage as it passes the dead points.—Sleighs and Cutters, L. B. Randall, Penn Yan, N. Y.—Securing hubs to axles, Leonard J. Worden, Utica, N. Y.—Wrought iron plate railroad car wheels, G. W. Alden, New-York. New construction of the tread and flange, etc.—Signal Lamps, R. P. Bailey, Niagara, N. Y.—Railroad Car Brakes, Louis Brauer, Sommerville, Tenn.—Gear of Carriages, Richard Murdoch, Baltimore, Md. Giving the brace levers a forward and outward projection from the short axles.—Vehicles, Charles Atkinson, Danville, Ill., and Gilbert S. Manning, Springfield, Ill. New arrangement of plate springs, diminishing the irregular motion of the carriage.—Carriage Hubs, Sylvester W. Beach, Chicago, Ill.—Wagon Couplings, W. D. Guseman, Morgantown, Va.—Discharging a horse and shafts from a carriage, Gilbert Hubbard, Sandersville, Mass.—Securing nuts on axles, T. W. Williams, assignor to himself and H. T. Hoyt, Philadelphia.—Cast Iron Carwheel, Albert & Moury, Cincinnati, O.

### Hydraulics and Pneumatics.

Chain Pump, James Harrison, New-York. The use of coiled wire lifting ropes, in connection with the buckets of a chain pump.—Gate of turbine wheels, L. M. Wright, Niagara Falls, N. Y.—Pump, Silas Hewit, Seneca Falls, N. Y. Arrangement of tubes, piston head and valves.—Raising water, Andrew Nicol, Carbondale, Pa. New mode of raising water, specially designed for mines.—Basin Faucet, Erastus Stebbins, Chicopee, Mass.—Hydrodynamic machine for testing the strength of materials, Francis C. Southrop, Trenton, N. J.—Wind wheel, James Mitchell, Woodsfield, O.—Hydrant, Wm. W. Benney, Seneca Falls, N. Y., a self-closing hydrant.—Water Wheel, Reuben Daniels, Woodstock, Vt.

### Mechanical Powers, etc.

Weighing Machine, Rufus Porter, Washington, D. C.—Hand Truck, Le Butt, Lincolnton, N. C. New mode of constructing, arranging, operating, etc., the dumping truck.—Lifting Jack, Wm. Thomas, Hingham, Mass.—Compressing gaseous bodies, Wm. A. Boyce, Newburg, N. Y.—Drop Press, Milo Peck, New-Haven, Ct.

### Grinding Mills, and Mill Gearing.

India-rubber Belting, Robert Hale, Roxbury, Mass. Mode of folding and cementing strips of India-rubber cloth by a series of mechanical devices, of moistening the seams and applying the India-rubber, etc.—Redressing Mill Stones, Wm. G. Gill, Henderson, Ky. Combination of two or more picks, with the grinding and operating screw shaft and lifting cams, etc.—Hanging mill stones, Wm. A. Clark, Samuel D. Porter, and William D. Simpson, St. Louis, Mo., suspending the upper stone from above by means of a ball and socket joint, or its equivalent, when the eye of the said stone is made to embrace the upper portion of the spindle of the running stone, and is secured thereto with a sufficient degree of rigidity, by means of an elastic packing.—Faucet, Lucius J. Knowles, Warren, Wis.—Fluid metre, James R. Maxwell, Cincinnati, O.—Feeding grain to mill stones, Milton and Charles Painter, Owing's Mills, Md.—Hydraulic blast generator, August F. W. Partz, New-York.

### Lumber, and Machines for Working it.

Cutting Veneers, Gilbert Bishop, New-York.—Portable Field Fence, Ezra Cole, Fairhaven, Mich. A picket fence, without rails or clasps.—Opening and Closing Gates, Solomon Cole, Rochester, N. Y.—Pannels of Portable Field Fence, Isaac D. Garlick, Lyons, N. Y.—Saw Mill, Daniel and Angus A. Methven, Wooster, O.—Adjustable Bed and Gauge, David Hodges, Suffolk, Va.—Turning Cylindrical Wooden Boxes, Henry Mellish, Walpole, N. H., assignor to Chas. Pope, Brookline, Mass.—Rotary Shingle Machine, Wm. Bevard, St. Louis, Mo. —Cutting Match Splints, Thos. Cook, New-York.—Mortising Chisel, George P. Ketchum, Bedford, Ind.—Joiners' Plane, Benjamin J. Lane, Newburyport, Mass. New and efficient mode of securing the plane iron on the stock.—Joiner's Bench Strip, Charles T. Pearson, Chelsea, Mass. A new contrivance for adjusting the strip to the height of the board to be planed.—Planing chair seats, Edward Q. Smith, Cincinnati, O.—Dressing pieces of lumber, Harvey Brown, New-York. Dogging lumber in planing machines, David N. B. Coffin, Jr., Newton, Mass., and Henry D. Stover, Boston, Mass.—Machine for gathering and depositing dipped matches, Thos. Cook, New-York.—Joiners' Plane, James Lashbrooks, Owensborough, Ky.—Rotary Planing Cutter, Henry D. Stover, Boston, Mass.—Allowing play to the arbors of circular saws, Harvey R. Wolfe, Louisville, Ky.—Compressing the end of blind slats, Luther T. Smart, Manchester, N. H.—Shingle Machine, C. M. Young, Sinclearville, N. Y.—Bit for cutting out cylindrical plugs, C. W. Saladee, Columbus, O.—Cutting grooves and slots, R. F. Underhill, Indianapolis, Ind.—Compound Guage, Albert Williams, Philadelphia.—Gage for Hand Saws, Michael Kennedy, Troy, N. Y.—Scroll Sawing Machine, John J. Curtis, East Boston, Mass.—Portable Cross cut Sawing Machine, Stephen Scotton, Wayne Co., Ind.—Riveting the panels of portable fences, Charles Van De Monk, Oaks Corners, N. Y.—Shingle Machine, Wm. A Garratt, Patonsville, Tenn.

### Leather, Tanning, etc.

Leather Shoe Binding, Eugene L. Morton, Charleston, Mass.—Cutting of heels of boots and shoes, John Shaw, Natick, Mass.—Splitting Leather and Hides, Isaac Lippman, Paris, France.

### Household Furniture.

Folding Bedstead, James A. Johnson, Antrim, O.—Bed Bottoms, J. F. Keeler, Cleveland, O.—Curtain Rollers, Chandler Fisher, Milton, Mass.—Washing Machine, Abraham Huffer, Hagerstown, Md.—Folding Bedsteads, J. B. Wickersham, New-York.

### Arts, Ornamental, etc.

Swells for Melodeons, etc., Jeremiah Carhart, New-York,—Violin Attachment, Andrew Hett, Ga. The application of vibrating strings to stringed musical instruments.—Photographic ground for wood engravers, Robt. Pierce, Worcester, Mass.—Pianofore Action, Henry Steinway, New-York. Mode of securing a rapid repeat or tremulant note.—Machine for engraving cylinders, Robert Muckelt and Wm. Rigby, Salford, Eng.—Pianoforte Bridge, T. E. Power, Columbia, Mo.—Fountain Pen, C. A. Rodefield, Columbus, Ga.—Pianofore action, Spencer B. Driggs, New-York. Balancing or supporting the centers of motions of the keys, at above or near the top thereof.—Violin, Bradley Fitts, Charleston, Mass. Bells behind the sounding board of a stringed instrument, vibrating in harmony with the strings.—Removing photographs from glass to paper, Edward Howell, Ashtabula, O. By means of a coating of beeswax upon the glass plate.—Printing in Colors, Wm. Croome, Brooklyn, N. Y.—Printing Press, Jason L. Burdick, New-York.—Oscillating Printing Press, Charles Potter, jr., Westerly R. I.—Printer's Composing Sticks, James and William Zedgewell, Middletown, Conn.—Printing Press, D. H. Windner, Cincinnati, O.

FIRE-ARMS.

Fire-arms, J. B. Read, Tuscaloosa, Ala.—Overcoming windage in fire-arms, Ambrose E. Bainsede, Bristol, R. I.—Cartridges, Edward Lindmer, New-York. An annular wad and casing to contain the powder, formed of certain materials stated.—Revolving fire-arms, Fordyce Beal, New-Haven, Ct. Fire-arms, Edward Lindmer, New-York.—Repeating fire-arms, Wm. M. Marston, New-York.

MEDICAL AND SURGICAL INSTRUMENTS, ETC.

Surgical splint apparatus, J. H. H. Burge, Brooklyn, N. Y.—Spinal corsets, Alanson Abbee, Boston, Mass.

MISCELLANEOUS.

Rotary Brick Machine, George Crangle, Philadelphia.—Omnibus Coffer, Joseph T. Curtiss, New-York.—Brick Machine, J. W. Jayne, Sandusky, O.—Same, James Hotchkiss and Wm. H. Scolfield, assignors to themselves and Wm. R. King, Yellow Springs, O.—Artificial Honey, Zenas Corbin and Gedeon Marlett, Syracuse, N. Y.—Coal Cracker, Townsend Poore, Carbondale, Pa. A rocking cracker, with fixed and swinging gratings. Trap for animals, Frederick Routhe, Hartford, Ct. Sliding and expanding spring barbed fangs, in combination with one, two, or more exploding barrels.—Portfolio, Robert Arthur, Philadelphia. With an elastic back or pinge, and elastic fastening, both adjustible.—Wash-board, Edward and Britain Holmes, Buffalo, N. Y.—Approach Opening Gate, Geo. W. McGill, Buffalo, N. Y.—Shirt Stud, W. Vogt and J. J. Klink, Louisville, Ky.—Centrifugal Battery, Albert Potts, Philadelphia.—Inkstand, Bennett J. Heywood, London, Eng.—Brick Machine, Stephen Parks, San Francisco, Cal.—Tanning Apparatus, O. B. Wattles, Waddington, N. Y.—Burglars' Alarm, David Coon, assignor to himself and B. F. Chessbrough, Ithaca, N. Y.—Cutting boot and shoe soles, Stephen Thurston, assignor to himself, M. L. Ward, Huntington & Co., Newark, N. J.—Tips for sugar molds, John Turl, New-York, assignor to Samuel Turl, Brooklyn, N. Y.—Block for blocking boots and shoes, Francis G. Harding, Boston, Mass.—Life Preservers, James Knight, New-York.—Paring horses' hoofs, V. N. Mitchell, Concord, N. C.—Hat Stand, John B. Wickersham, New-York,—Hominy Machine, O. F. Mahew, assignor to W. H. Weeks, and O. F. Mahew, Indianapolis,. Ind.—Holders for Sad Irons, etc., Leon Londinsky, New-York.

## Recent Foreign Inventions.

### The Manufacture of Wire.

THE process of drawing wire is a matter of no little interest to all who have a taste for mechanical operations. A recent foreign journal contains a description of the process employed at one of the principle establishments in England, from which we take the following.—ED.

The metal having been reduced by rolling to the proper diameter (known as No. 4 iron wire gauge) for undergoing the further stages of reduction, by means of draw-plates, is first "pointed," or hammered down at one end, to admit of its extremity being passed through the soft steel die or draw-plate, and then taken hold of by a pair of plyers at the opposite side of the die; which plyers draw a small portion of the wire through the die and cause its elongation. The end of the wire is then released from the plyers and attached to a drum, which is caused to rotate slowly, and draw the metal through the draw-plate (which is held fast on a "draw-bench") and wind it up in a coil upon its periphery. The wire, provided it is not steel wire, may then be passed through a second draw-plate or die, having a somewhat smaller hole, and drawn down to a size corresponding with the diameter of the hole in that die. After two drawings, the metal will be found to have atttained such hardness and brittleness, that it would be impossible to reduce it further while in that condition; it has, therefore, to be softened by the annealing process. For this purpose an annealing oven is employed, consisting of a cast-iron cylinder, set up vertically in a brick furnace, the flue or fire-place of which surrounds the cylinder. Into this cylinder the hanks of wire to be annealed are thrown, until it is filled with wire; the cylinder is then closed at top, and it is fired up for about 15 hours. When the whole mass of iron wire is sufficiently heated in the closed chamber, the fire is damped and let out, and the furnace is allowed to cool. After the lapse of about 36 to 48 hours from the time of charging the oven, the wire is removed in an annealed or softened state. A hard thick scale is now, however, found on the surface of the wire, caused by the heat to which it has been subjected; and before the wire is re-submitted to the drawing process, it must undergo the operation of "pickling," that is, it must be subjected to the corroding action of dilute sulphuric acid, in order to loosen and remove the scale. This operation is thus effected: The hanks are thrown into a tub lined with lead, containing the dilute acid, and piled one upon the other to the height of some four or five feet, the whole pile being covered with the liquid. When the wire has remained sufficiently long immersed for the uppermost hank, which was the last placed in the liquor, to become sufficiently corroded to insure the ready disengagement of the scale, the wire is removed from the tub and thrown into a water tank to be washed. By this method the hank that was first inserted is the last to be removed from the action of the acid; and that which was last submitted to the acid is the first to be withdrawn from its action. The acid having been washed out of the hanks, they are next washed with "lees," and placed in a heated chamber to dry. The outer ends of the hanks are then again pointed, and the drawing action is recommenced. These operations are repeated in succession, as described, until the wire is reduced from gauge No. 4, the starting point, to any gauge, say No. 10, 20, or 30, as may be required; every reduction in the diameter of the wire, when steel wire is being made, and every second drawing, when iron wire is made, entailing extra labor in all branches of the process.

A Liverpool gentleman, Mr. James Cocker, has contrived some valuable improvements in some of these details, and especially in the annealing process, by which the operation is rendered continuous, and by which one batch of wire, when sufficiently heated, may be removed without disturbing the rest. This is done by means of sliding doors in an oven of peculiar construction, with a series of chambers, railways, etc. By this means a bath of wire may be annealed in three or four hours. The cost of fuel is also diminished.

Another improvement is in a simple machine, by which the wire is polished. This is effected by the rapid oscillating motion of a padded box or rubber, which is supplied with emery, the drums holding the wire at a moderate tension. The pickling process has also been improved.

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An improved method of obtaining or preparing printing surfaces and in printing therefrom. Jeane Baptiste Desire Chevalier and Narcisse Rabouin O'Sullivan, of Paris.

This invention has for its object to obtain printing surfaces as a substitute for lithography and other similar methods of printing, the use of which, besides being much cheaper than lithographic printing, offers this advantage, that a design consisting of a number of different colors can be printed at one and the same time; while in ordinary printing each color has to be worked off separately, and entails a great amount of labor.

In carrying out the invention, the patentees take any suitable permeable substance or fabric, such as linen, calico, cloth, canvas, or other woven or suitable material, or, it may be, a reticulated metal surface, or metallic plate or sheet, perforated with minute holes to impart the required degree of permeability, and on this surface they draw or write the desired figures or characters in an ink composed of lamp-black, indian ink, gum, sugar and salt.

A coating of this ink being applied to the permeable surface in the form of the design or character or characters required, they next coat the permeable substance, on the side drawn upon, with a thin coating or film of gutta-percha or of gelatinous material, covering the drawing as well as the other part of the permeable material. When the coating of gutta-percha or other gelatinous material is dry, the fabric, or other surface, so coated, is washed. The gutta-percha or gelatinous material, at that part where it comes in direct contact with the permeable material, adheres firmly thereto; but at those parts covered by the ink, it has no such adhesion, and simply holds to the ink design. The ink, being readily soluble in water, is removed in the washing, and carries away the gutta-percha covering it; thus the design drawn upon the permeable material is now the only pervious part remaining in the surface.

The back part of the pervious substance or fabric is now to be coated with the ink or color or colors required to be printed; and the ink or color having been applied, the impression is taken from the face of the fabric or substance by pressure in a suitable press; the paper or surface to be printed being placed in contact with the face of the fabric or printing surface, the ink or color pasess through the pervious part, and is thus applied and printed on the paper or other surface required.

Instead of applying the ink or color to the back of the pervious material, the design in that material may be placed on a pad containing a reservoir of ink or color, by which the ink or color is supplied by pressing it on such pad; from which it passes through the pervious parts of the material constituting the design, to the paper or substance placed on the face of the printing surface to receive the impression.

An improved process of tanning. By Emile Constantin Fritz Sautelet, of Paris.

In carrying out this improved process of tanning, the skin or hide is first freed from the hair in the ordinary manner, and it is then cleansed from grease by means of soap and water, or alcohol, or other solvent which does not injure the fibres. A solution of bark, tannin, sumach, catechu, or other tanning materials is then caused to filter or soak through the skin by means of pressure or suction, produced by mechanical or physical means. This filtration is continued from fourteen to forty-eight hours, or for a shorter or longer time, according to the nature and thickness of the skin. The quality of the leather is improved by employing weak solutions and continuing the action from two to fifteen days. A solution of gelatine, or other matter capable of precipitating the tanning material, is then introduced by pressure or suction. This solution and the tanning solution may be introduced repeatedly and alternately. By these operations the skin may be tanned in a very short time. The skin is stretched during the process in a double frame, which confines and clips the edges of the skin, which is sustained by a trellis or open framework. This frame prevents the skin from being forced out and torn away from its attachments by the pressure of the liquid to which it is subjected. The skin, thus held and supported, is made to form the partition between two vessels or compartments. Into one compartment the soap and water or other cleansing liquid is introduced by a pump or by a pipe from an elevated cistern, and the liquid is thus forced to pass through the skin into the other compartment. The pressure may also be given by a piston, acted on by steam, or by water or other fluid, or by forming a partial vacuum in the other compartment. Several skins may be fixed in the same apparatus, and traversed successively by the same solution; and several apparatus may be arranged in stages, so as to operate upon a large number of skins at the same time. After acting upon the skins in this manner for three or four hours, more or less, the cleansing liquid is drawn off, and water is introduced to wash out the cleansing liquid. The water is then drawn off, and the tanning solution is then introduced in a similar manner, and its action is continued for a period varying from a few hours to fifteen days, more or less, according to the nature and thickness of the skin and the the strength of the solution employed. A solution of gelatine, or other similar substance capable of precipitating the tanning material in the interior or pores of the skin, is then introduced in a similar manner. By thus impregnating or nourishing the skin with gelatine, an additional quantity of leather is formed or precipitated in the pores of the skin, and the quality and density of the leather is thus improved. The alternate filtration of the tanning liquid and the solution of gelatine may be repeated several times, if desired. The nourishing of the skin with the solution of gelatine may also be effected by simply immersing the skin in the solution, or by rubbing it into the skin by hand, or by mechanical means. The density or weight of the leather may be still further increased, if required, by impregnating it with a solution of a salt of baryta, or a salt of lead, or other suitable metallic salt, and with another salt capable of forming an insoluble precipitate with the first salt. Thus, the skin may be impregnated successively with solutions of sulphate of soda and chloride of barium, which decompose each other, and produce an insoluble sulphate of baryta, and also a soluble sulphate of soda, which may be washed out by causing water to traverse or filter through the skin as before.

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Iron.—Mr. H. Gilbee, Finsbury, Eng., has patented an invention, which consists in receiving a stream of melted iron as it flows from the melting or refining furnace into a suitable trench, and projecting downwards upon it, either perpendicularly or obliquely, and at several places as may be required, a strong current of atmospheric air, so that the stream of melted iron may be thereby cut through, or nearly so, and every portion of the liquid metal brought successively in contact with the current of air. It is also proposed by means of suitable bridges or stops placed across the stream of liquid metal to arrest the progress of the slag or scoriæ, so that the pure surface of the metal may be brought into contact with such currents of air. Currents or blasts of air are also forced directly or obliquely upon the surface of pools or reservoirs of melted iron, kept nearly full by adjusting the supply of metal, so that the current of air shall decarbonize the said metal at the surface, and force such decarbonized portion over the edge of the reservoir, into a second reservoir, where the said operation may be repeated as often as may be required.

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New Electric Magnetic Engine.—On the invitation of the Emperor of the French, Mr. Thomas Allen, of London and Edinburgh, has recently visited Paris, for the purpose of exhibiting to a scientific commission, appointed by the Emperor, an electro-magnetic engine of his invention, which solves, as he asserts, the problem of the application of electricity to the movement of machinery. Mr. Allen's engines are now at work at the engine manufactory of M. Cail, whither scientific men, anxious to test this new motive-power, are flocking to witness the experiments. Napoleon I. was greatly interested in this scientific problem, and the present Emperor is not less so, and, it is said, is about to order a practical application, as an experiment, to a locomotive engine.

## Fire-Arm Prize.

The Sardinian Government, through their Minister of War, has caused a proclamation to be issued, inviting the inventors and manufacturers of small arms throughout the world to contest for the best fire-arm as a war weapon. A premium of 10,000 francs will be awarded to the party or person whose weapon shall eventually be approved by the Central Committee of Artillery, at the city of Turin, as worthy of adoption by the infantry of the line, or riflemen.—*Scientific American.*

## Clay Retorts in Generating Gas.

Clay retorts are well adapted for generating gas from the Scotch cannel coal, which produced coke of no appreciable value; but it might be doubted, whether they were, in useful effect, equal to iron retorts for the distillation of coals containing or yielding a large quantity of liquid matter; as, for instance, with coals which yielded 350 lbs. per ton of ammonical liquor, instead of the very usual quantity of 100 lbs. Nor were they to be commended for small works, using a coal producing valuable coke, for in such works an exhauster could not be applied; neither was the management and employment of the retorts so careful as in larger establishments, conducted under intelligent and experienced supervision. An error had been committed by some speakers in supposing that clay retorts could be worked at a pressure of seven inches of water with more advantage than at lower pressures. Clay being a porous material, allowed the gas to transpire through its capillary passages, and hence it was better to work under a low pressure. Neither was it ordinarily correct to say, that clay retorts would produce more gas than iron retorts, or gas of better quality. In fact, clay retorts would not evolve more, nor indeed so much gas as iron retorts, if they were not, by the expenditure of a much larger quantity of fuel, sometimes worked at a much higher temperature than would be prudent with iron retorts.

## Method of Regulating the Height of Water in Steam Engines.

A working model was exhibited in the library after the meeting, of Lapham's "*Method of regulating the height of water in steam boilers.*" This consisted of a pipe and cylinder in communication, situated at the proper level of the water in the boiler, and kept filled with cold water. Two pipes proceeded to this cylinder, the one from the steam portion of the boiler, and the other from the water space. When the water fell below the proper level, steam would pass through the lower or water pipe, and expanding the water in the cylinder and pipe, would cause an expansive action against an india-rubber diaphragm, to which was attached a lever, acting by cranks and levers upon the stop-cock, or valve in the feed-pipe.

## Curiosity of Art.

Rev. Dr. Kirk, in a letter from Manchester, England, says: "I had in the oldest factory of the town, a striking exhibition of the value of human art and labor. A pound of cotton was pointed out as worth a pound of gold. Its cost as crude cotton may have been eight cents. And as a curiosity of art, I was shown a pound of cotton spun into a thread that would go around our globe at the equator, and tie in a good large knot of many hundred miles in length."

# THE FAMILY CIRCLE.

## Scientific.

### Chemistry for the Million.

"Chemistry made easy" and applied to all useful purposes, is our object in these articles. In our last we gave a somewhat protracted account of *oxygen* as one of the most abundant and important elements of matter. If we were to enlarge as much on each of the other fourteen elements, of which, in combination with oxygen and with each other, nearly all known bodies are composed, it would take too long, and the reader would despair, of coming to any practical application of these things to the necessities and conveniencies of life. We therefore give below a very brief description, little more than a definition, of the other fourteen, requesting that the reader will review, what we have said of oxygen and form as definite an idea as he can from so short a description of the following.

*Chlorine.*—A yellowish green gas, twice and a half heavier than air; exists largely in sea water; constitutes more than half of common salt; enters slightly into all soils, and is essential to their fertility. The most economical way in which a soil deficient of it, can be supplied, is in the form of cheap agricultural salt, such, for instance, as comes from fish barrels, or has been damaged by shipping, and is worth little or nothing for other purposes.

*Sulphur.*—A yellow, solid substance, insoluble in water, pretty generally known as *Roll* Brimstone; flowers of sulphur, a fine yellow powder, or the milk of sulphur (lac sulphuris) a still finer powder, nearly white. Sulphur exists in all soils; constitutes a portion of guano, superphosphate of lime, of animal manures, and of fertilizers generally, If we were to analyze 86 lbs. of ground plaster, we should find it to consist of precisely 32 lbs. oxygen, 20 lbs. lime, 16 lbs. sulphur, and 18 lbs. water Derived from the soil and fertilizers, sulphur passes through the food into the animal economy, forming a part of the tendons, skin, horn, hoof, and especially of hair and wool.

*Phosphorus.*—A yellowish substance, of about the hardness of bees' wax, existing in all good soils, essential to the growth of the cereals, grasses and most other crops. Is supplied to the soil originally from the decomposition of the rocks. Re-supplied to soils exhausted of it in the form of guano, superphosphates and barn manures. Passes from the soils to the crops, and thence to animals, making up a large part of the bones and a considerable portion of the muscles, blood, and some other parts.

*Carbon.*—Charcoal is carbon, mixed with a little soot and ash. Diamond is pure carbon. Plumbago, wrongly called black lead, as used in our pencils, is a less pure form of carbon. Strange as it may seem to our young readers, charcoal, diamond and plumbago, are one and the same thing, except that in the two last there is an intermixture, almost too small to mention, of other ingredients.

*Silicon.*—This is the basis of sand, flint and quartz rock. It is a brownish powder, a little resembling the paint called Spanish brown; is very abundant in nature, constituting probably as much as one fifth of the entire globe.

*Nitrogen.*—A colorless gas. About four fifths of the air are nitrogen. The remaining fifth is mostly oxygen. It constitutes a part of all plants and animals; is supplied to the soil in the form of ammonia and the nitrates, as they exist in guano, animal manures, vegetable fertilizers, green crops ploughed in, &c.

*Hydrogen.*—A colorless gas, about fourteen times lighter than air, used on account of its levity for filling baloons. Water is composed of one part by weight of nitrogen to eight parts of oxygen. In bulk, the hydrogen in water is twice that of the oxygen. If you simply heat a gallon of water it will expand into some 1700 gallons of steam; but if you decompose a gallon of water, that is, separate the oxygen from the hydrogen, it makes 1000 gallons of the former, and 2000 gallons of the latter; and then if you mix the two and set fire to them, they return back with a violent explosure, to one gallon of water. It is quite *possible* to educe light and heat from water, but as no economical mode of doing it is yet discovered, we shall probably have to resort to other materials for replenishing our hearths and lamps a while longer yet, notwithstanding Mr. Paines' promises to the contrary. We do not despair however of important discoveries being yet made in this line; and if they should be let us not be more surprised than our fathers would have been at the thought of sending our errands by electricity across the ocean in a second, a thing which we hope is on the eve of being done.

*Iron.*—This is too well known to require us to speak at large here. In another place we shall illustrate facts concerning it of great importance to the farmer as well as to many others.

*Manganese.*—This is a metal somewhat resembling iron. Like iron it exists in most soils, like that it is never found separate from other substances, but has to be prepared, like iron, by separating it first from other matters with which it is combined.

*Potassium.*—This is a brilliant, silver-white metal, light enough to swim on water, and so combustible, that it takes fire and burns with great heat, on falling upon water, however cold, or even upon ice. It is the basis of potash; and it exists in all soils, as variously compounded with other substances, also in all plants, and in the animal tissues.

*Sodium.*—This is the basis of soda; is a dingy whiteish metal, comparing in appearance with potassium about as copper does with silver; is lighter than water; floats on water and takes fire, if the water be a little warm, but is not enkindled, like potassium, by cold water or ice.

*Calcium.*—This is a yellowish-white metal, and is the basis of lime. It is very abundant in all limestone regions.

*Magnesium.*—A white, shining metal, the basis of the magnesia of the shops.

*Aluminum.*—The basis of clay; a bright, silver-like metal, not easily rusted, having nearly the strength of iron, with little more than the weight of wood.

Of these elements, it will be perceived that four, oxygen, chlorine, hydrogen, and nitrogen, are gases. Four, sulphur, phosphorus, carbon, and silicon, are solids, at ordinary temperatures, Seven, iron, manganese, potassium, sodium, calcium, magnesium, and aluminum, are metals.

*Carbon, hydrogen, oxygen,* and *nitrogen,* are regarded as *organic elements,* because entering largely into organized bodies—plants and animals. All the rest are considered as *inorganic elements,* because not found in organized bodies, except in small quantities—that which constitutes the ash when the vegetable or animal matter is burned; and it should be remembered—what we have before stated—that when an organized body perishes, its organic elements pass into the air and become a part of it, while the inorganic fall as ash, and become a part of the soil, and that whether the body be destroyed by the rapid process of combustion, or by the slow process of decay.

Very few of the above fifteen substances are ever seen in their pure, elementary state, except in the chemist's laboratory; and it is difficult for those who have not seen them, to form a just conception of their properties. We have endeavored to give as good an idea of them, as we could by mere description, because it is out of these that nature constructs those compounds with which we have to do in actual life—those which constitute the rocks, the soils, plants, animals, our own bodies even, and all that we see about us.

If two elements combine with each other, they form what is called a *binary,* (or two-fold) compound. Three elements combined, form a *ternary,* (or three-fold) compound. But it seldom, or never happens, that three elements combine with each other directly. It is a general law of nature, that the elements combine first in pairs, and then these pairs combine with each other. If the warp for a piece of cloth be of cotton and wool, here are two substances. If the filling be of wool and flax, here again are two; but how many are there in the texture? Not four, but three, because one is common to the warp and the filling. So it is with chemical combinations;—sulphur and oxygen form sulphuric acid; oyxgen and iron form oxide of iron; now put these two pairs together, and you have sulphate of iron, a ternary, or triple compound. If every farmer in North America, in addition to his practical skill, understood the nature of this one compound, as well as the chemist in his laboratory, it would be worth at least a hundred millions annually to the continent. Millions of acres, now almost useless, would soon be producing valuable crops, and the reclamation would be at a trifling cost, compared with the value of the increased produce. It is so with a great many other compounds that either enrich or ruin the soil; if the practical farmer understood their nature, he and the whole country would feel the benefit. But can he understand them, and yet be industrious in the practice of his profession? We admit there is some difficulty. A shrewd, common-sense, and pretty intelligent farmer, once said to an editor in our hearing: "You tell us we should know a great deal, but we know nothing more for your telling us that." He was right. The agricultural press has been in fault. It has told the farmer that he should know every thing, but has it helped him to know any thing of the real science that underlies his practice? Certainly it has, and it has been of immense benefit to the farming interest. But, to our apprehension, it has not done the thing right end first. It has not begun at the beginning, and taught the rudiments of science, and defined its terms, and made itself understood—has not measured out its teachings to the wants of men, who are not students of all day long, but have to catch a little now and a little then, as opportunity occurs. We are resolved to reform in this respect, and the farmer, or the farmer's boy, or the farmer's wife or daughter, who will follow us in these articles, shall not have occasion to say that we have taught nothing practical, or within their reach. Bear with us in one or two more of these rudimentary articles, (which we know are dry,) as they are absolutely necessary to a just understanding of what is to follow, and we will be as practical as you wish, will use no jaw-breaking terms that can possibly be avoided, and will come with our chemistry into your every-day affairs, and it shall show you not only what sulphate of iron is, but why it sours the soil and how you may sweeten it; not that genial warmth and gentle motion with free access of air makes the "butter come," for you know that well enough, but why it does; nor that yeast makes the bread rise, for you know that better than we, but why; and so of other things both pleasing and profitable for you to know, but which, hitherto, have been known but to a few.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

## THE WEATHER.

APPEARANCE OF BIRDS, FLOWERS, ETC., IN NICHOLS, TIOGA CO., N. Y., IN MAY, 1857.

**By R. Howell.**

*Place of Observation,* 42 *degrees North, on a Diluvial Formation, about* 40 *feet above the Susquehanna River.*

| May. | 6 A.M. | 1 P.M. | 9 P.M. | | | REMARKS. |
|---|---|---|---|---|---|---|
| 1 | 42 | 55 | 42 | South | Cloudy | Rain set in at 4 P.M.; some snow; barn swallows came. |
| 2 | 46 | 54 | 52 | South | " | Rain by squalls all day. |
| 3 | 40 | 53 | 41 | North | " | |
| 4 | 42 | 51 | 54 | S.East | " | Hard rain near all day; began before day. |
| 5 | 53 | 60 | 50 | North | " | Light rain by squalls; soft maple in bloom. |
| 6 | 45 | 60 | 47 | South | " | Light rain in the night. |
| 7 | 39 | 54 | 46 | North | " | Light rain in the night; toads first heard. |
| 8 | 32 | 64 | 45 | " | " | First whip-poor-will heard. |
| 9 | 44 | 74 | 64 | South | " | First bumble bee and small white flower seen. |
| 10 | 58 | 73 | 40 | North | " | Peach trees in bloom; first water snake seen. |
| 11 | 31 | 40 | 31 | " | " | Dandelion and black currant begin to bloom. |
| 12 | 26 | 54 | 34 | " | Clear | |
| 13 | 27 | 62 | 41 | South | Cloudy | |
| 14 | 43 | 51 | 48 | North | " | Hard rain all day; daffodils and sugar maple bloom. |
| 15 | 49 | 53 | 46 | " | " | Very hard rain nearly all day. |
| 16 | 43 | 61 | 47 | " | " | Hard shower in the night. |
| 17 | 34 | 50 | 40 | " | " | |
| 18 | 32 | 68 | 48 | " | " | Water-trough froze over; blue-belle in bloom. |
| 19 | 42 | 52 | 43 | South | " | Rain set in at 6 P.M.; rain all night. |
| 20 | 38 | 36 | 40 | North | " | Hard rain all day, with snow—hills white. |
| 21 | 42 | 62 | 46 | " | " | English cherries begin to bloom. |
| 22 | 47 | 74 | 51 | " | " | A few plant corn; first humming-bird seen. |
| 23 | 48 | 81 | 50 | " | " | Plum trees and Juneberry begin to bloom. |
| 24 | 47 | 82 | 59 | " | " | Common cherries begin to bloom; sugar maple in full bloom. |
| 25 | 52 | 88 | 65 | South | " | White ash in full bloom; red currants bloom. |
| 26 | 55 | 86 | 65 | " | " | A few apple trees begin to bloom. |
| 27 | 61 | 78 | 57 | " | " | Rain set in at 5 P.M. |
| 28 | 52 | 75 | 52 | S.&N. | " | Three fields of corn up on Susquehanna flats. |
| 29 | 47 | 78 | 48 | North | " | |
| 30 | 48 | 67 | 52 | " | " | |
| 31 | 50 | 73 | 62 | South | " | Light rain in morning; apple trees in full bloom. |

OBSERVATIONS ON THE MONTH OF MAY.

With the exception of a few days, cold and very wet, so much so that by the time farmers could get their land ready for sowing a heavy rain would set in, so that at the end of the month hundreds of farmers had not finished sowing oats, and but little corn was planted till the 23d, and the following Monday and Tuesday, and on the hills a number of farmers had not finished at the end of the month. There was but little grass till after the 20th, although many turned out before the 15th because they had no fodder. Hay and all kinds of fodder scarcer than before in a number of years. Hay rose from \$6 or \$7 in the winter to \$14 or more during the month, and corn rose from 62½ cents in April to \$1 06 cents at the end of the month; and oats from 40 cents to 62½ cents. All kinds of fruit trees were from eight to fifteen days later in bloom than in former years. Apple tree leaves on the 20th were no larger than a five cent piece, and at the end of the month forest trees generally showed but little greenness, and on many of them the leaves hardly to be seen.

## Insects

DESTRUCTIVE TO THE LEAVES, ETC., OF VEGETATION.

Having, by chance omitted, for one number, our familiar illustration of this branch of economical farming, which has so long occupied our attention, we again recur to the topic with fresh interest. But if we have been inactive for a month, not so exactly with those of whom we are now to speak.

Hybernians, are a group of caterpillars, chiefly without any covering, or naked, which are exceedingly destructive to various kinds of trees. They have ten legs, six before and four behind. The eggs are laid in rows in the spring, upon the extremities of the branches by the parent moth, from sixty to a hundred in number, which are hatched about the middle of May or when the currant is in blossom, and she then dies. Canker-worms belong in this group. The young canker-worm is of various colors, but generally a dark brown, or blackish, with a stripe on each side, and two light bands across the head. The belly is also light colored. On the tip of the last ring are two warts. When not eating they lie at full length on the leaf, or rather beneath it. They are about one inch in length, and are sometimes called *Inch worms.* When about four weeks old, they drop down by a thread to the ground, and descending from two to six inches beneath the surface, according to Dr. Harris, they become crysalids in twenty-four hours. They are of a light brown color. They come out chiefly by night. The females are destitute of wings.

Canker-worms or Span-worms, (Geometers,) are naked or covered only by a very short down, smooth, except the warts already spoken of. As they grow older they grow darker in color. Some species, instead of lying at full length when at rest, extend themselves like a short twig, their hind legs only being in contact with the leaf or twig, and remain so for hours. When they are alarmed, they drop by their thread and hang suspended in the air, and when the supposed danger is passed, they climb up by the thread, seizing it with their jaws and fore legs, while they draw up their hind legs, and then extend themselves as before. A few make for themselves thin cocoons, protected partially by leaves, and thus undergo their transformations. A few others fasten themselves to the stems of plants without any protection, and are thus changed to crysalids.

In their perfect state, they are slender moths, with tapering antennæ, those of the males being often feathered. Their feelers are short and slender, the thorax not crested, wings large, angular, thin, often marked by one or more bands, and when at rest, slightly inclined or nearly horizontal. A very few species carry their wings like the skippers, the hind wings extended horizontally and the fore wings somewhat raised and but partially closed, or one or both pairs extended and elevated.

The crysalis of this moth is of a light brown color; that of the female is larger than that of the male. During a mild season, and after a hard frost, in the fall, the insect bursts the skin of the crysalis and comes up to the surface. This process is often delayed for weeks, and even months, so that they come up at almost all seasons. As the female has no wings, it is confined to a very limited space, scarcely leaving the ground covered by the limbs of the tree from which it dropt. She slowly finds her way up the trunk of the tree, to the branches. The male being provided with wings, soon follows after them, and being winged, they flutter about the female during her ascent, during which they pair. The more general time of this rising is in March. Soon after the female has laid her eggs she languishes and dies, as already stated.

The defenses generally employed, and most efficient, we described on a former occasion. To prevent the ascent of the females, tar, or raw cotton, or dissolved or melted India-rubber, may be placed on bands of cloth or otherwise, around the trunk of the tree in October or early in November, and daily renewed till the insect ceases to appear. Collars of tin or lead, or troughs containing a cheap oil with some careful stuffing of fine hay, etc., which will not absorb the oil between them and the tree, is often used with good success. A little mound of sand *while it remains dry*, around the base of the tree, has proved an impassible barrier to this insect. Sprinkling the leaves, etc., with fine air-slacked lime is sometimes successful, if used when the leaves are wet with dew or rain. A mixture of a pound of soap to seven gallons of water, thrown upon the trees by a syringe, has also been found efficient in destroying these and other insects, without injury to the tree.

After they have entered the ground, swine will destroy great numbers of them. Ploughing will facilitate this mode of their destruction. Some recommend ploughing in June and the removal of the soil to the depth of six inches, for some four or five feet from the trunk of the tree, replacing it with compost or rich earth. The earth carried away should be thrown into a pond-hole and left covered with water. These last-mentioned plans are recommended by some of the best farmers in Massachusetts. Another mode of destroying caterpillars was accidentally discovered by a gardener in Glasgow, Scotland. A woolen rag blown by the wind into a currant bush, was found covered with these insects. Placing pieces of cloth among his bushes, through his garden, he found multitudes collected on them for shelter. In this way he destroyed thousands every morning. We know not why this should not succeed with one species as well as with another.

The canker-worm has a destructive natural enemy in several kinds of birds, and in a large splendid ground-beetle, called *Calosoma Scrutator.* The ichneumon fly stings great numbers of them, depositing an egg in each worm which it pierces. Each egg hatches a maggot that preys upon the worm and destroys it. The Platygaster, another four-winged fly, drops an egg in each egg of the canker-worm, which becomes a fly like its parent.

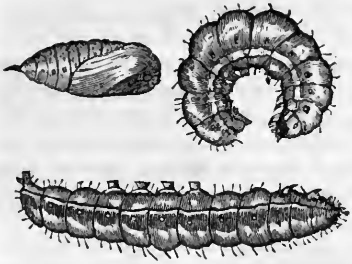
Another span-worm, larger than the canker-worm, of a light yellow color, head rust-color, with black lines on the back, is often found very destructive to apple-trees, elms, etc. It appears at the same time with the canker-worm, resembles it in its habits, and can be kept in check by the use of similar means.

### INSECTS ATTACKING THE COTTON PLANT.

A commission has been given, very judiciously, by the general government, to our learned friend, Mr. T. Glover, to investigate the habits and conditions of insects in the Southern States. In times past comparatively little has been done, in this direction, in that section of country, although we should seem, perhaps, inexcusably unjust or ignorant, did we omit the mention of a splendid work, on "the *rare* insects of Georgia," by Mr. Abbott, a work, neither excelled nor equalled, as a work of art, on that subject, in this country. Other gentlemen have contributed valuable essays in different periodicals, but no general examination, as by State authorities, has, to our knowledge, been undertaken. We can not therefore do a better service to our numerous Southern readers on this subject, than to follow the track of Mr. Glover, presenting his experience in this investigation, as found in his official report, in connection with the other sources of knowledge at our command.

### THE CUT WORM.

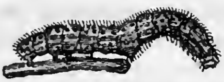
This insect has been very troublesome; many cotton fields being literally thronged with them, so that most of the plants were either eaten off or destroyed. When such numbers are found, swine are perhaps the most efficient exterminators. Young pigs will not root deep enough to injure the roots of the plant, and experience shows that they will select those spots which are most infested by the worm. Like other moths, a lantern placed in and around the fields, will attract the insects, in their winged state, who fly into the flame and burn their wings, by which means they are or may be easily captured, their power of flight being destroyed. Mr. Glover describes a lantern of peculiar form, which may have some advantages over all others; we should not, however, place much value on a lamp of any peculiar construction.

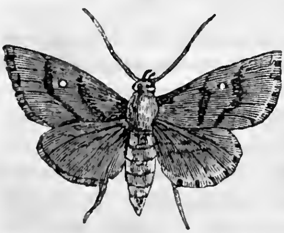


CUT WORM.

### THE COTTON CATERPILLAR.

This insect, sometimes called the Cotton-army worm, is very destructive to the leaves of the plant. Sometimes they appear in great numbers. In other years, they do not. In 1855, as Mr. Glover informs us, this insect first appeared in August, on the plantation of Mr. Hunter, of Tallahasse, Ga., and gradually spread over that region, so that in October, much damage had been done. The perfect insect, he describes as of a triangular shape, the head and the extremities of the wings forming the angles. The upper wings are reddish gray, having a dark spot, with a whitish center, on each. The under wings are reddish gray. As the insect grows older, the gray changes to a more reddish tinge. Like other moths, it flies by night, and if undisturbed, remains motionless during the day. When in the open air, they are found among and under the leaves of the cotton plant, and also among the weeds. The eggs are principally deposited on the under side of the leaf, but often on the outer calyx, and sometimes on the stem, ten to fifteen being on a single leaf. They are small and being of a green color, and closely attached to the leaf, it is difficult to distinguish them from it. The eggs are hatched, according to Dr. Capers, in from fourteen to twenty days, but Mr. Glover found them hatched "invariably, in a week from the time they were brought into the house." The young caterpillars are able to suspend themselves by a thread, when shaken from the plant; when fully grown they measure from one and a half to nearly two inches in length. The first brood appears in August and September. Those examined by Mr. Glover were all of a green color, with narrow, longitudinal light stripes along each side of their bodies and two broader light-yellowish stripes along each side of their backs, and down the center of each of which, was one distinct, narrow, light-colored line. Each of the broader bands was marked with two black spots on each segment, and on each segment of the sides, were three or more dark dots. The head was yellowish-green, spotted





COTTON CATERPILLAR.

with black. The caterpillars of the second and third generations are of a much darker color than those of the first, their underparts are more of a yellowish green, and their sides sometimes of a purple cast. Their backs are black, with three distinct light-colored lines running down their length, and their heads are also darker, and of a yellowish brown, spotted with black.

In fifteen or twenty days after this caterpillar has attained its full size it ceases to eat, doubles over a portion of a leaf, and fastening the edge by its own silk, forms an imperfect cocoon. The crysalis is first green, changing to a brown and almost to a black. It is furnished with small hooks by which it can fasten itself to the leaf. The habits of this insect do not seem as yet to be definitely understood. Fires and lamps are resorted to for the destruction of these insects; white cotton flags about a yard square, are also used, as are the woolen rags already mentioned.

# Domestic.

## Health, Morals, Patriotism.

After our thirty-two pages of Agricultural matter, and our condensation of Mechanical matters for the next sixteen, and our Scientific articles, done in plain English for the general reader, we always feel a relief, in coming more freely into the family circle, where we may throw off restraint, talk with the old *folks,* take a romp with the children, hear them laugh, and perchance give them now and then a bit of good advice.

Of all the thousand and one subjects to be talked of on these occasions, none is of more importance than the one at the head of these remarks. It is sad that scores are born with frail constitutions, are diseased from the dawn of being, and never know the blessing of anything like good health. But it is sadder far that hundreds, thousands, tens of thousands, are every year spoiling a sound constitution, inherited from healthy parents, worth more than all the gold of Ophir, and easier to keep, if they could but understand, in time, and obey the laws of health. The following considerations serve to illustrate the value of what thousands are throwing away, as if not worth preserving.

You see men and women every day, with large hearts, of noble impulses, really desirous of enacting a useful part in life, but unable by reason of impaired health. Treasures of kindness, which they would *diffuse,* if their strength were equal to their will, they can now only *receive.* You often see them departing from life when life should flow at the highest—manhood, womanhood, youth and childhood lost to the world and the world lost to them. It would be rash to say that all this is chargeable to ignorance or disregard of the laws of life and health. But that a large part of it is to be so charged, who can doubt? To say that the good, the virtuous, the pure-minded, those inclined to be industrious, useful, benevolent, ought not to die till after a long time, might sound very strangely. But we would like our readers to look around them and see if too many, with the buds of hope, or the blossoms of promise, or the rich but immature fruits of life upon them, have not left us too soon for the world, too soon for themselves, and sooner than Divine providence would have permitted, had not his own laws, imprinted on our very being, been violated.

You hear a child cry. Nothing will pacify him. If the little one were a demon, he could not be more ungratefully regardless of every kind effort in his behalf. A boy or a girl is peevish, sour, petulent, always in trouble, always troublesome, having perhaps no friend but the mother, and that one only because the mother's love knows on bounds, and can hardly make distinctions. One man is recklessly brave—runs into danger when there is no good reason for it; another trembles and flies when he ought to stand at his post. One is over excitable, easily thrown off his guard, now angry without a cause, at another time boisterous with mirth, and at another sad enough to give the horrors to all about him, to-day endangering his own and others' safety by reason of excessive anger, to-morrow grieving himself to death for what he has done or left undone; another has not spirit enough to be angry, and as for being glad or sorry for anything, you would about as soon expect it of a stick. There is a reason for this unhappiness somewhere. The instabilities, the inconsistencies, the failures of high expectations in life are not causeless.

We do not mean to imply that all the babyishness, and petulence, and unhappiness, all the recklessness and cowardice, the outburts of passion and the consequent crimes, the lack of mental balance and the want of moral courage, in the world, are the result of ill health. Nor would we insinuate that ill health always results from a violation of natural laws; but that it often does, is too plain to admit of a doubt; and that a healthy body is favorable to the attainment of a well balanced mind and a good heart, is equally clear.

The English are fast getting it into their heads that the Anglo-Saxon blood, or rather the Anglo-Norman, as they call their own race, can not be long propagated in this country; that it can not be fully acclimated and yet retain its pristine vigor. Some among us would say, they wish to have it so. We do not think so badly of them. True there are narrow minds everywhere; and envy is cruel wherever it exists; but we believe of England at large, that, as a mother rejoices in the fair proportions of a daughter, so she would rejoice to see us a great and happy nation, at peace and in honorable alliance with herself. Our climate is not as favorable to a full and manly development of the individual as hers. Nevertheless we have it in our power to falsify her predictions, whether uttered in malice or in sorrow. The problem turns not upon climate but upon ourselves.

If we will insist that our youth be guided by age, instead of being left while yet inexpert to their own guidance; if those of both sexes shall be trained to as much healthful, invigorating, out-of-door exercise as those of old England; if we will practically admit, what we all know to be true, that quiet comfort, innocent pleasures, industry, and a good conscience, are infinitely more to be desired than sudden wealth, with all its accompaniments, including a guilty conscience among the rest, then will the predictions of transatlantic croakers be vain. They will pass over us, like slander over a good man, who lives it down.

But if childhood is to receive no counsel from the experience of age; if young America at seventeen is to be too wise to be instructed by old fogy fathers and mothers of forty; if the garden hoe, and rake, and the bridle reins are to be regarded as too vulgar things for delicate hands; if our girls in their teens are to be too high-minded to assist their mother in the family affairs, or to do anything else, except to sit down and read a novel and wait for a beau; if our sons are all to live by their wits, except the foolish ones, who were born to hew and grub; above all if intemperance is to sweep over the land; if our liquor dealers are to be made nabobs for poisoning us to death; if, in proportion as their vile concoctions lack exhilaration, we must swallow the more, making the trade so much the better for them and the worse for us; if we are to smoke, chew and snuff from childhood on; if we are to cherish visions of a deceitful liberty, that refuses all restraints, that neither fears God nor regards man, that may wrong others at pleasure, and abuse our own nature because it is nobody's business but ours, that allows practices utterly inconsistent with the propagation of a healthy race, as if, forsooth, posterity might not complain of the infliction of a deteriorated constitution, provided only that we who now live mind our *own* business, have our enjoyments, elevated or vicious as we choose, and make our money, honestly if we can, but make it, then will those predictions prove too true. There will be neither health nor wealth, neither private worth nor national dignity nor independence; and that the Anglo-Saxo-Norman race has deteriorated on our shores will become a matter of history.—Ed.

## Do Right.

We sometimes get the *blues*—it is all wrong, and one never ought to have them—and we say, in view of the tricks, frauds, crimes and outrages all around, that men are taking leave of their virtue, their honor, and their integrity, as things that are done with, not suited to the age, to be cast off, like winter garments in spring

Then, again, we think, it is so perfectly *manifest* that "*Honesty is the best policy;*" that all but fools must see it, and begin to do right from selfish motives if they have no better, and so the world will be saved from universal corruption and degradation. We cheer up again; we begin to look on the bright side; we say, there will be virtue yet, there will be moral worth, there will be fair dealing; honor, integrity, the fear of God, a generous love for man will outlive this boisterous squabble for sudden, ill-gotten wealth.

That most execrable saying, that "all the world's a cheat, and he's a fool that won't have a hand in it," is magnificently refuted in the following, from Fowler & Wells' *Life Illustrated.* May they give us many such illustrations of life. We would rather be the author of the imperishable thought it contains, than the owner of millions obtained by means the least questionable. Reader, if it makes you feel as much better as it has us, you will want to read it more than once. Duty should be done, reward or no reward in view; but we are always thankful to the man who makes us see and feel that well-doing and its reward is so nearly the whole of life, that it matters little for the rest.

"A wealthy merchant remarked a few days since, that he was fully convinced, from his own experience, that the *means* to achieve success lay in a nutshell—DO RIGHT. 'When I say success,' said he, 'I mean not only the accumulation of fortune, but the ability to enjoy it—to live a useful, happy life.' What is the use of much wealth if we know that it was obtained by wronging the widow and orphan, by the tricks of trade, selling articles for what they were not, and a thousand modes of unfair dealing? Granting that men grow better by doing kindly acts, and feel the better for seeing others do them, how sickening it must be to the true man to knew that by false dealing he has curdled the milk of human kindness in *one breast*, turning it to bitter gall! If wealth comes by such means let it come not at all. Shall an active man, possessed of God-given powers, turn back to his past life and be able only to say: I have done nothing to add to the wealth of the world in gold or silver, or in artistic productions, but have coveted the labors of others, heaped treasures sordidly to myself, foolishly supposing that I might trample down all feelings and sympathies not directly productive of gain? or shall he rather be able to say that, While I have industriously gathered wealth, I have done it with cheerful looks, kindly words, warm sympathies; I have done it by making things which have added to the comfort of men, by bringing within the reach of the poor great means of present enjoyment, the opening of a brilliant future, by throwing lights of sympathy on the dejected, lifting up the down-fallen, strengthening the weak, infusing in all a fervent belief in the brighter part of their being? Such a life will enable a man to throw off his wealth as a scale, at the last day, bearing away only the imperishable soul, which has accumulated strength along with the mass of worldly goods justly and usefully obtained. Would you, young man, belong to the latter class? DO RIGHT. How much better to do right, if you die not worth a farthing, and feel that you have rather added to the good faith in the *higher life on earth,* than to die while rolling in the luxury, pomp, and pride of ill-gotten gains! Then DO RIGHT! DO RIGHT! and if tempted for monetary ease and vanity to abuse your better nature, rest assured that both the body and spirit will suffer in a ratio corresponding to the transgression. There is but one road to happiness and contentment—DO RIGHT.

## A New Sport for Ladies.

IT is said that *fishing* is becoming a popular amusement for the ladies in some parts "out west." Good, if they will dress accordingly. We would recommend an enlargement of the bonnet for sunny days, and india-rubber hoods and boots for rainy weather. Perhaps a slight shortening of the dress, as compared with Broadway fashions would be convenient. But let them go a-fishing. Anything to draw our women from the everlasting tread-mill round of kitchen, pantry, and sitting-room. If the garden and the side-saddle will not draw them into fresh air, let the fish-pond and the trout-stream do it.—ED.

## Manufactures in Alabama.

THE Huntsville *Advocate* states that manufactures in Lauderdale county are rapidly growing in importance, value and variety. Water power there is great, and excellent sites for mills, factories, etc., abound. Manufacturing there is more profitable than any other pursuit. Seven thousand bales of cotton are expected to be required this year. Most of the operatives, too, are whites—men, boys, girls and women, who now get paid for their labor, where before there was no demand at all for it. Villages are growing up where these manufactories are established as they do in the North, and have the same thriving appearance, with churches, schools, etc. The *Advocate* says:

We hope to see the manufacturing spirit in Lauderdale grow and multiply until it becomes the Lowell of the South. She has greater power, free from disease, fuel, labor, mental and practical knowledge. And there is no limit to the demand for all that she can manufacture. There is wealth, power, population and independence to all in the business.—*Ex.*

Our Southren brethren are beginning to understand it. Agriculture, or planting, (if the distinction must be made, we love to call it all agriculture, as this last fairly covers the whole) will impoverish any nation under heaven if the manufacturer is not among them. Here is another.—ED.

A LETTER from one of the upper counties in Georgia gives the most flattering account of cotton manufacturing in that State. Many of the factories were established some years since, and even at the present high prices of the staple, are paying the stockholders handsome dividends, seldom, if ever, falling below 20 per cent. The yarns and osnaburgs are of the first quality, and a better description of cotton being used in their manufacture, they find a more ready sale in Baltimore, Philadelphia, New-York and Boston, than similar products of Eastern mills. With cheap fuel, right in the midst of the cotton growing region, illimitable water power, and the most agreeable and healthful climate in the world, there is no reason why all the Southren States should not possess manufactories of this kind.—*Natchez Courier*, 9*th.*

To us these views from such a quarter look the worse for old England, and not quite so well for New-England, but all the better for the South. In order to steady prominent prosperity, Agriculture and the mechanic arts must dwell lovingly together on the same soil. The farmer helps the mechanic; the mechanic helps the farmer. Part them, and both whistle for a customer; the *middleman* gets the earnings of both. Part them and expect prosperity! You might almost as well part a man and wife and expect a legitimate posterity.—ED.

## Learn to Spell.

AN editor received a letter in which weather was spelt "wether." He said it was the worst spell of weather he had ever seen.

## Gentle Words.

THE sun may warm the grass to life,
The dew the drooping flower,
The eyes grow bright and watch the light
Of Autumn's opening hour—
But words that breathe of tenderness,
And smiles we know are true,
Are warmer than the Summer time,
And brighter than the dew.

It is not much the world can give,
With all its subtle art,
And gold and gems are not the things
To satisfy the heart,
But oh, if those who cluster round
The altar and the hearth,
Have gentle words and loving smiles,
How beautiful is earth!

## The Ploughshare.

THE bark may rest upon the wave, the spear may gather dust,
But never may the prow that cuts the furrow lie and rust;
Its metal is unsullied, no blood stain lingers there,
God speed it well, and let it thrive unshackled everywhere.

ELIZA COOK.

# Children's Page.

## For the Children to Think of.

WONDER if we could draw a word of practical instruction for our young readers from the things about us? Let us see.

Here is our office boy. He is a German. Eleven years have passed over him. Within that time his father has died. A brother and a sister have gone, and he alone is left to a mother of forty, in a strange land, feeble in health, and working hard for his and her support.

Happening in the office with him alone just now, while the fresh morning breeze at our window inspired loving thoughts, we held the following conversation: A——, do you love your mother? Yes. Does she love you? I suppose so. Does she not do for you every day what she would not, if she did not love you? Yes. Then she does love you, does she not? Yes, she does. And does all she possibly can for your good; studies your comfort, clothes you neatly, sends you to the Sabbath-school? Yes, and she is going to send me to the day school soon.

Well, A——, I should almost know you had a good mother, though I never saw her, from your coming here so early every morning, so neatly clad and so clean and innocent looking. It must be that you have a good mother. Do you always go directly home to her when you leave the office in the afternoons? Yes; but she sometimes lets me go and play with the boys evenings. That is right; she wants you to be happy, and she knows you love play; but would she not love to have you in chatting with her? I suppose she would. Yes, the time seems shorter to her when you are in; she then has less fear of your falling into bad ways, thinks less of the relatives she has lost, and more of you. Be a good boy; be company for your mother as much as you can; tell her all your heart; make her feel that she has one little friend that will be kind always; and when you have to be away use no words she might not hear, do nothing she might not see, and you will make a good man and be prosperous, if you love and obey your mother; and now for the post-office.

Off he goes, and while he is gone, we write the above. But here he comes, with letters, containing, we hope, some of the needful, and we must stop. Children, most of you have a father to love as well as a mother. Be obedient to them both; above all things be kind and loving to your mother; and now read the fifth commandment, obey it, and be happy; and we will see what the boy is bringing from the post-office.—ED.

## A Stomachfull.

An Irishman, in great fright and haste, rushed into Abernethy's office, and exclaimed,—

"Be dad, the boy Tim has swollowed a rat?"

"Then, be dad," said the Doctor, "tell the boy Tim to swallow a cat?"

## Epitaph on a Drunkard.

Here lies the remains of a poor body,
Who ne'er could refuse a glass of toddy;
Despite King Alcohol's power to save,
Death has laid his subject in the grave,
Beneath this stone, which now doth tell,
Of all his falls where last he fell.

## The Toper's Nose.

In a great storm at sea, when the ship's crew were all at prayers, a boy burst into a fit of laughter; being reproved for his illtimed mirth, and asked the reason of it:

"Why," said he, "I was laughing to think what a hissing the boatswain's *red nose* will make when it comes into the water."

## Morning Reflections.

Magistrate.—What has brought you here, sir?
Prisoner.—Two Policeman, please your honor.
Mag.—Then I suppose liquor had nothing to do with it.
Pris.—Yes, sir, they were both drunk.

## Parsing Extraordinary.

Some one furnished a Frenchman with a conjugation of English verbs that will strike most people as being amusing if nothing more. He complained much of the difficulties of our grammer, 'especially the irregular verbs. "For instance," says he, "Ze verb to go. Did one ever see one such verb?" And with the utmost gravity he read from a sheet of paper: "I go." "Thou departest." "He clears out." "We cut stick." "Ye or you make tracks." "They absquatulate."

"Mon Dieu! Mon Dieu! what disregular verbs you have in your language."

## A Simile.

Winchell tells a story of a dog which undertook to jump across a well in two jumps. There are a great many people just like the dog—but they that undertake such a feat usually "bring up" down in the water.

## Use no Bad Words.

Impure words stain the tablets of a virtuous mind, and the more we hear of them the less nice becomes our sense of the refined and pure.

Learn to love the Beautiful, and appreciate it whether in sound, or objects of sight. We are convinced men do but half live in this world, from want of proper cultivation of this faculty. We have too few artists in soul and sense.

## A Tumbler.

"'Tis strange," muttered a young man, as he staggered home from a supper party, "how evil communications corrupt good manners;—I've been surrounded by tumblers all the evening and now I'm a tumbler myself."

## Bring Water.

"Are those bells ringing for fire?" inquired Simon Tiberias. "No indeed," answered Tibe; "They have got plenty of fire and the bells are now ringing for water to match."

"Capital punishment," as the boy said when the school mistress seated him with the girls.

# Book Notices, etc.

Report of Wm. H. Ladd, President of the Ohio State Board of Agriculture, for the year 1856.

Through some one's favor this report has reached us. We see that Mr. Ladd speaks of a diminution in the wheat crop of that State for the last ten years, but he rejoices in a corresponding increase in the corn crop, and asks the Legislature, "if it does not become them to provide by law against the worse than destruction of so many million bushels of this cereal annually," by distillation, we suppose he means.

Ohio, it appears, had in 1855, 624,746 horses, valued at $31,415,004. In 1856 it had 621,443 horses, valued at $36,231,127. A plain inference would be, since the horses have diminished in number but increased in value, that the Buckeyes are making money on their horses out of somebody.

Their horned cattle have diminished from 1,791,189 in '55 to 1,687,710 in '56; but increased in value from $18,902,006 in '55 to $21,551,170 in '56. They are thus improving their breeds of cattle and making money on them also. The President says, "That from the thousands expended by liberal, enterprising gentlemen, in introducing superior horses and cattle, millions are accruing to the State." We have not one doubt it is so.

The importance of pasturage to the State is spoken of in fitting terms; and liberal seeding with more generous supplies of manure, especially in the way of top-dressing the thinner portions, is commended. President Ladd expresses the hope that by the next Agricultural report, "The vast interest of Ohio may be represented by 8,000,000 sheep, yielding 25,000,000 lbs. of wool."

The report closes with the recommendation of "A properly conducted Geological survey of the State, with a report of the same, *digested* with a special reference to the wants of the people." What could be more reasonable? How could money be better spent, and how can the people of that State, so rich in undeveloped treasures, know how best to direct their industrial energies, till such a survey is had?

If we were a Buckeye, we would clamor for a more thorough survey than has yet been made on the Western continent. Ohio can afford it.

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The Farmer, *an Agricultural Magazine,* for New-Brunswick, Nova Scotia and Prince Edwards Island.

The first and second numbers of this new work are on our table. It seems to have commenced its existence with a good spirit, and we wish it all success. A single article in the first number, on the improvement of stock, will *pay* for more than one year's subscription if the farmers of those provinces will heed it.

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Spirit of the Agricultural Press.—A large, well printed sheet with this title, full of valuable matter, has reached us from West Urbana, Ill. It is Vol. I., No. 1, and promises well. L. G. Chase and A. Gore are editors and publishers. We heartily welcome them to the brotherhood of workers for the great cause of Agriculture. They will get away some of our subscribers, but no matter; there will be enough for us and them. Their price is $2 a year in advance.

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American Corn Planter.—This monthly Southern Rural Magazine, devoted to improve Plantation economy, the advancement of Southern Horticulture, Manufactures, and the Domestic and Mechanic Arts, is well worthy of the attention of the Planter, Horticulturist and Housewife. Price $1 a year. It is published by N. B. Cloud, M.D., Montgomery, Alabama.

GRANVILLE, O., June 12, 1857.

MESSRS. NASH & PARISH:

GENTLEMEN :—I do no set much value on my own productions and presume that you or your readers will think less, but perhaps you can glean something from the following statement that may be of some use to your valuable paper. Central Ohio was visited last fall with the most severe drouth we have ever experienced, probably not more than one-fourth part of the wheat sown ever came up, or if it came up it soon died out, and the months of March and April were also hard on the wheat. It looked the first of May as if we could not have more than one-fourth of a crop. But May and June thus far have done wonders for it, and, although it is late, if the midge and rust let it alone we may have two-thirds of a common crop, and occasionally a field bids fair to be fine.

Oats and grass look finely. Meadows though thinned out by the drouth last fall, that were not pastured this spring, look well.

Corn, though late has come finely, and with good cultivating and a favorable season, we shall make a larger crop than ever before, as there is a large amount planted.

Fruit bids fair to be a large crop, except peaches and grapes. Most of our peach-trees and grape-vines were destroyed by the cold winter of '55 and '6; what remain alive, bid fair for a full crop of fruit.

Cattle were never so scarce and high as at this time since the settlement of the country. Sheep, in better supply, but in this county not more than one-half as many as five years since. The wool has been much of it taken off but none sold yet. Buyers are not quite ready to enter the market.

Hogs are abundant and high. If they should not be thinned off by the disease that prevails in some parts of the country (but not here,) and if we get a good corn crop, I think pork-eaters may hope for cheaper fare a year from this time.

Respectfully yours, WM. S. WRIGHT.

## Extracts about the Crops.

"CORN and cotton crops look well in the region of Vicksburg, Miss."——"The army worm is committing great ravages in Barren County."——"There is a general complaint throughout this County, (Balt. Md.,) of the destruction of wheat by the fly."——In Illinois "The wheat crop is almost an entire failure, owing to being winter killed."——"In Illinois, the prospects for the yield of wheat and other small grains are excellent."——(Take which you please, or neither. We believe that the ground in which winter wheat had been killed, was much of it sown with spring wheat, on account of the high prices. ED.)——"The corn crop" in Illinois "will be small."——(Nobody knows that yet, for July and August are the months that make corn. ED.)——"Hay," at the West," will be abundant."——(It can hardly fail to be so everywhere, in consequence of so much cool, rainy weather. ED.)——"The wheat crop, in upper Georgia, is the most promising we have had in many years; the oat crop is represented as being uncommonly good; and both crops unusually large."

The Lawrenceville (S.C.) *Herald,* thinks the effect of the cold spring may be only to retard, but not ultimately to diminish the cotton crop. It would now seem to be about settled, that the grass crop—one of the most important—will be everywhere good. Of the wheat crop, we hardly know what to think, but from all accounts, incline to a belief that it will be short of an average for the whole country. Corn may be an average, or more even, but the prospect certainly is not favorable. Shall we advise to the putting in of turnips in July? But there will be probably a hard drouth after these long rains, which is bad for the turnip; and then we see not when the farmer is ever to do his summer work, aside from the putting in of late crops, if these long rains continue.

Accounts from almost all quarters indicate favorably for the fruits.—Ed.

## Show and Trial of Implements.

A grand exhibition of Implements, with a thorough trial and comparison of their respective claims is to come on July 13th, at Syracuse, N.Y., under the auspices of the U. S. A. G. Soc., Col. Marshall P. Wilder, President.—Ed.

We renew the offer of our May and June numbers, containing the valuable articles on "Wool," on the "Artificial Propagation of Fish" and on "Chemistry for the Million," to all new subscribers advancing for the next year; and we here extend the time to the first of August, provided the large number of extra copies, which we printed for the purpose, shall last so long. This applies to the members of clubs, forwarding at club rates. We also renew the offer in our last, of premiums to local agents and to old subscribers, who will promote the formation of clubs in their respective neighborhoods.—Eds.

## New-York Wholesale Prices of Country Produce.

Fruit.—The fruit market is well supplied with Strawberries from South Jersey and Hackensack. Gooseberries, Cherries, and Currants are beginning to be more plentiful and cheaper. South Jersey berries are selling at $2 50 *a* 3 50 per 100 baskets; Hackensack, $4 *a* $6 per 100 baskets. Gooseberries, $3 75 *a* $4 per bushel. Currants, 16c. per lb. Cherries, 12 *a* 15c. per lb.

Dried Fruit.—Peaches pealed, 18 *a* 21c. per lb.; do. unpealed, 10 *a* 12c. per lb. Dried Apples, 11 *a* 13c. per lb.

White Beans, $2 *a* $2 25 per bushel.

Potatoes.—There has been no arrival of Bermuda Potatoes the past week, which has made them rather scarce, and the price has advanced $1 per bbl. Charlestons are also higher, and selling well. Old Potatoes of good quality are also stiffer, and the demand is better than it was last week. Bermuda New Potatoes, $6 50 *a* $7 per bbl. Charlestons—Mercers, $6 per bbl.; Round Ones, $5 per bbl. Sweet Potatoes, $3 75 *a* $4 per bbl. Old Potatoes—Mercers, Western, $3 75 *a* $4 per bbl.; do. Kidneys, $4 *a* $4 25 per bbl.; Northern and Western Carters, $3 50 per bbl.; do. do. Junes, $2 75 *a* $3 per bbl.; do. do. Mercers, $3 25 *a* 3 50 per bbl.; do. do. Reds, $2 25 *a* $2 75 per bbl.

Turnips.—Ruta Bagas, $1 25 *a* $1 50 per bbl.

Onions.—New-Orleans, $3 25 *a* $3 50 per bbl.; Bermuda, $3 per bbl.

Vegetables are not over plenty in market, owing to the cold, stormy weather of the past week, which has had a tendency to make the prices of all kinds higher. Green peas—Jerseys are selling at $3 50 *a* 4 25 per bbl. Green Beans, $6 *a* $7 per bbl. Long Island Peas, $1 25 *a* $1 37 per basket. Asparagus, $1 per doz. Lettuce, $1 25 *a* $1 50 per doz. Radishes, $1 50 *a* $1 75 per hundred bunches. Pie Plant, 75 *a* 87c. per doz. New Turnips, $6 *a* $8 per hundred bunches.

Butter.—Orange County Pail, 23 *a* 25c. per lb.; good State yellow (firkins), 24c. per lb.; good State yellow (tubs), 22 *a* 23c. per lb.; good State Welsh (tubs), 20 *a* 22c.; common State, 18 *a* 19c. per lb.; good Western, 19 *a* 20c. per lb.; common Western, 13 *a* 14c. per lb.

Lard.—13 *a* 15c. per lb.

Cheese.—10 *a* 11c. per lb.

Poultry.—Dressed Fowls, 13 *a* 14c. per lb.; do. Turkeys, 15 *a* 17c. per lb.; Live Fowls, 68 *a* 81c. per pair; do. Ducks, $1 per pair; do. Turkeys, 14 *a* 15c. per lb.; Pigeons, $1 50 *a* 1 75 per dozen.

Eggs.—State, 19½ *a* 20c. per dozen; Western, 18c. per dozen.

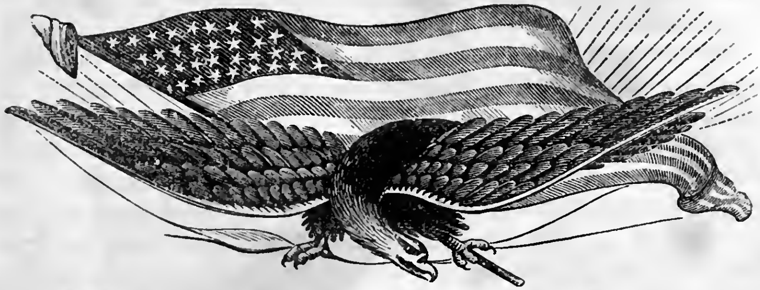
Beef.—By side, 10 *a* 12½c. per lb. Veal—10 *a* 13c. per lb.

Mutton.—9 *a* 11c. per lb. Lambs—$3 *a* $4 each.

Pork.—Corn-fed, 9 *a* 9½c. per lb.; Still-fed, 8¾ *a* 9c. per lb.

Calves.—Slaughtered, 9 *a* 11c. per lb.; Live, 7 *a* 7½c. per lb.

[*N. Y. Times, June 20th.*




# AMERICAN FARMERS' MAGAZINE.

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## Rural Economy of England, Scotland, and Ireland.

BY M. LEONCE DE LAVERGNE.

IN 1855 a Frenchman of the above name, after enjoying great advantages for understanding the agriculture of his own country and of Great Britain, published a book of 400 pages, octavo, with the above title, in which he gives a vivid description of the agriculture of the United Kingdom, and with admirable discrimination compares it with the less prosperous condition of this great branch of human industry in his own France.

Lavergne's book was translated into English, and republished in England and read by everybody there. He did the English people ample justice, and by this they were gratified; he did it better than any Englishman had been able to do the same thing, and by this they were mortified. They were astonished that a little Frenchman should run over the Channel, mingle among them a few years, and then go back to belle France, knowing more of them than they knew of themselves, and telling the story better than their best writers had told it. That they should feel a little chagrin can not be wondered at.

But the English have always had the good sense when a thing was done, to make the best of it, even if their king had lost them their best provinces. It was so now. The book praised them, and they praised it. As the laudations were deserved on both sides, there was nothing unfair in the exchange. It might serve to prolong the alliance between the granddaughter of George III. and the nephew of Napoleon. To praise and be praised is well enough; but to be praised first and then to return the compliment better comports with John

Bull's dignity; and as for his writers, we advise them to redeem their laurels, by giving the world as truthful and graphic an account of French agriculture as Lavergne has of English.

We have mentioned this book for the purpose of giving our readers a few instructive facts from its pages; and first with regard to Sheep culture.

Lavergne informs us that wool has always been the primary object with the French farmer; meat only a secondary object; while with English farmers, the reverse has always been the favorite policy. He does not tell us, that now the carcase of an English sheep is worth more than both the carcase and wool of the French. If he had told us this, it would not have been far from the truth. Robert Bakewell, of the Dishley farm, in Leicestershire, conceived the idea of breeding a race of sheep, that would give as much meat at the end of one year, as the old did at the end of three. He set about it. By the perseverance of a lifetime, he accomplished the object, made himself rich, trebled the profits of sheep farming throughout the midland counties, and gave England more wealth than their Australian gold will ever give.

While Bakewell was doing this for the central regions, John Ellman commenced an operation equally favorable for the chalk hills of the south, which resulted in the establishment of the farmers' Southdowns, so called from the downs (hills) on which they were first reared, though why those hills, which skirt nearly the whole south of England are called Downs, is more than we know, unless it be from the short, sweet, downy grass that grows upon them. Others commenced the Cheviot race, a hardy, large-bodied, long-wooled (we suppose we ought to say long haired) race, adapted to the cold mountainous regions of North Britain.

These races soon spread into other parts; and as the English have long studied adaptations, it was natural that each should diverge towards regions similar in soil and climate to that in which it originated. Other breeds have arisen, but these are the principal; the Southdown for the chalky or lime regions, where the grass is short, thick, and sweet; the Leicesters, or Dishleys, as sometimes called, from the farm of the originator, for the rich valleys; and the Cheviots for the cold, mountainous regions. Up to the time of these improvements, it had been the custom of English farmers to give their sheep good pasturage through the summer, and to leave them to shirk as they could in winter. From being very fat in the fall, they became very lean in spring. Such men as Bakewell and Ellman reasoned that if a frog will be long in getting out of a well, by jumping up three feet in the day time and falling back as far in the night, a sheep will come slowly to maturity, if he gain in summer and lose about as much in winter.

Their idea was to breed from parents maturing early, so as to create a tendency to early maturity, and then to feed in winter sufficiently to make up for the deficiency of the pasturage, in order to mature them by one continuous growth instead of three or four growths and retro-growths. Would not animals reach a larger size in one or two years, than in three or four? The result has shown that they will. The present generation of English farmers are growing team horses, oxen, cows, sheep, swine, in about half the time their grandfathers did, and in many cases of larger size. Since George III., instigated by the very learned and amiable, but much mistaken Lord North, set the dogs of war upon our fathers, the average weight of horned cattle slaughtered at the Smithfield market has doubled. The average weight of sheep in the whole kingdom has probably increased as much.

Lavergne assures us that the cattle strengthened in England, including veals, are twice and a half as heavy as those slaughtered in his own country, on the average. It should be considered, however, that in France a larger proportion are slaughtered as veals, and fewer are raised from the very fact that by the practice there prevailing it requires about twice as long to rear an animal, and consequently the farmer can rear but about half as many. Lavergne states that the Leicester sheep get their full growth in one year, and average one hundred lbs. of mutton; that the South-downs, on the shorter feed of calcareous soils require a year and a half, and average 80 lbs., and that the Cheviots in the North of England and the adjoining regions of Scotland, come to maturity in about two years, and give on an average a little less weight than the South-downs. He believes that the present tendency is for these three races to absorb all others; and he considers the English to have been profoundly wise in looking as they have, almost exclusively, at the meat producing qualities of their flocks. If they have hitherto palmed upon us rather too much of the cloths made from the sheep, whose mutton chops are more to be commended than their wool, it may be well for us to look to that hereafter; and if our Congress should look at it the next winter, and correct what we consider to be an error of the last, the material prosperity of our country would not fail to be promoted.

That large portions of this country can produce the finest of wool advantageously, there is not the least reason to doubt. That such wool should enjoy a reasonable protection we do not object, but wish that the duty in its favor were somewhat higher than it is, because we believe that the French and the German policy of keeping sheep almost entirely for their wool—sheep that will give 10 or 12 lbs. of meat to the quarter and 3 or 4 lbs. of exceedingly fine wool, is the very best policy for a portion of the farmers of this country, promotive of their own and the national wealth. But we as confidently believe that the policy of the English, that of feeding sheep to weigh 25 lbs. to the quarter, and to give more wool but coarser, is the true policy of another portion of American farmers. Are the only sheep "pleasant to the eye and good for food" to be driven from the country, because the lazy Spaniards or creoles on the pampas of South America, with their stolen farms of three leagues square, can afford to grow wool for nothing, and throw away the carcase? Is there a man among us who is unwilling to give a cent more for his blanket, or two cents more for his working pants, or three more for his business coat, if made from wool grown by American farmers and manufactured by American mechanics? And yet we do not believe that a protection on medium and lower grades of wool, sufficient to quicken the hands of industry in every part of the land, would raise the price of these articles so much; and sure we are that it would give us more money to buy with of one another, than if the money for such articles is all to be sent to other countries. We have heard a great many reasons why the grower of sheep, whose meat is needed among us, but will not alone quite remunerate the grower, should be turned off without a cent of protection on the wool, because not of the first quality; but all the reasons which we have heard seem to us just no reasons at all. Our reasoning is, that the meat of these large, beautiful, hardy sheep, which everywhere adorn the hills and valleys of Old England, will almost remunerate the grower of them. If then he alone is not to go unprotected, he can make it a good business to grow them, for their meat and wool together, to adorn with them our shores and river sides and lake coasts, and to make them as truly a source of national supply and of general industry as the finer-wooled sheep better suited to higher and more inland situations. We believe that if there is one thing that should be protected more than any other, if it be admitted that a government may care in any respect for the industries of the people, it is the fleece of these very sheep, which Lavergne considers the surest source of agricultural wealth, affording the best of food but not the finest of wool, quickly growing, of hardy habit, and better suited to large portions of our country than any other.

We may have recorded too many of our own thoughts, where we promised interesting and important facts from Lavergne, but our readers shall hear more from him hereafter.—Ed.

## Peruvian Guano.

*An Account of the Guano Trade at the Chincha Islands, on the Coast of Peru.*

An intelligent gentleman, Maurice F. Nash, of New-York, who has been employed in loading ships with guano at the Chincha Islands, on the coast of Peru, has communicated to me much interesting information with regard to the trade. He has been at the islands at three different times, and nearly six months in all. The last time he was there was in the fall and summer of 1855. He says that he found at times five hundred sail of vessels together at the islands loading with guano, generally large ships; one ship was 4,500 tons burthen. Not less than 500 sail of vessels are now at the islands loading for the United States, Spain, Portugal, France, and English and German ports; some cargoes are sent to Constantinople, and some to Russian ports in the Black Sea. This was before the war in the Crimea; the Russian trade will now open again, both from the Black Sea and the Baltic. Freights are high, £6 10s are often paid a ton for Liverpool and Hampton Roads; generally 10 shillings more per ton freight is paid to Europe. At the rate at which guano is now shipped from the Chincha Islands, it will be exhausted in eight years; not a ton will be left. Twenty thousand tons are sometimes removed from the islands in a single day. These islands are situated opposite to the city of Pisco, 130 miles south and south-east from Callao and Lima, on the west coast of Peru, within the tropics, in latitude about 13°, 46′ south of the equator, in the great bay or bight of the coast. It never freezes, snows, or rains at these islands; fogs are seldom seen; but in the winter months, which are June, July, and August, dews come on at night occasionally; water does not fall in sufficient quantities to furnish a drink at the islands from one year's end to another, nor do the eaves of the houses drop water.

The Chincha Islands form a group about 10 miles from the mainland on the Peruvian coast; the rise and fall of the tide at the islands are regular and often equals six feet. The current of the gulf stream works up along the coast from the Straits of Magellan and Cape Horn, out of the Atlantic Ocean towards Panama Bay, by Valparaiso, Lima and Callao. This current is one branch of the Gulf Stream, which divides on the coast of Brazil; one current runs north to the Gulf of Mexico, the other south towards Cape Horn and then up the coast of Peru to the coast south and east of Callao. Here the shore forms a bay or bight, into which the sea exuviæ, consisting of animal matter, the remains of sea animals, floating and shell fish, deposits itself, and forms a vast bed of *sea mud*, of a chalky substance, containing *ammonia*, nitrogen and phosphate of lime and soda; this mud is of a white *green color.* When the anchors of the ships are raised at the islands they bring up large quantities of this *guano mud*, which, when dried, forms a substance like the guano on the islands, and when mixed with the guano, can not be distinguished from it.

It will be asked from whence has come this great deposit of guano? We answer, from the animal and vegetable matter of the sea. A writer in one of the late English Reviews says: "That sea weed grows from the bottom of the ocean to the surface, in stalks from 1000 to 2500 feet high, having stems scarce as big as a man's finger. A surface fifteen times greater than that of Great Britain covers the ocean with sea weed, stretching west from the Canaries and Cape Verd Islands, and east of the Gulf Stream; this vast dominion is not only filled with vegetable, but also with animal life. All over the ocean in every clime and latitude the water is filled with animal life until every wave is converted into a *crest of light* by animals of the minutest form up to sea monsters, which derive nutriment from the waters impregnated with animal matter. Reason and imagination are equally confounded by the effort to conceive the numbers of those hosts of individual existence generated or annihilated at every passing instant of time. No scheme of numbers can reach them even by approximation. All the materials of organic life are in a state of unceasing change from the minutest animalcule of the ocean to the leviathan of the great deep."

The laws of life and death in the ocean are the same as on land; as we have above hinted the transformations are governed by the same *Divine economy.* The bones left on the field of Waterloo were gathered up to be put on the corn and grass fields of England to make other bones for the fields of Sebastopol and Balaklava.

Man in his natural state was the last and most finished work of creation; he is naturally the longest lived of the whole animal kingdom. We are told by the philosophers that since the creation the remains of the human family alone would cover the land on the globe more than a foot deep of soil. What shall we say, then, of all the other animal and vegetable productions? When death takes place a large portion of all the animal and vegetable productions are carried by the streams and rivers into the ocean and there deposited; the purest water from our springs contains much animal and vegetable, not to say mineral matter, which glides off into the ocean and is there deposited and forms guano.

We find the ocean also instinct and alive everywhere with vegetables and animals in numbers and species beyound conception; these come on the stage of life at periodical times, from a moment to a hundred years, live and all die; and are changed and form other organizations. These decaying animals and vegetables form guano, and form the blue and green mud around our bays and creeks, which is a fertile guano itself. The Gulf Stream commences in the Bay of Panama on the west coast of America, and is occasioned by the combined laws of attraction and motion, or by the centrifugal force of the fluids and air which lie on the surface of the globe. The earth turns on her axis east with a velocity of more than 1000 miles an hour; on the equator it turns so rapidly that it runs away from the power of attraction. The wind and water are not carried forward as fast as the surface of the earth, hence both the wind and the water of the ocean within the tropics form a current to the westward, or rather the earth, runs away from both wind and water and leaves them behind, hence they both set off currents to the west, forming the trade winds, and the Gulf Stream. These are forced west until they strike the Asiatic continent; one branch turns off or is directed by the Eastern shore of Siam, China, and Japan, and forms a gulf stream, which sets north and east to Kamskatska. Another current sets south along the eastern coast of New-Holland to New-Zealand and the Fejee Islands. But the main current continues on through the East Indies into the Indian Ocean, and through it and by the Cape of Good Hope, thence up to the Bay of Guinea and across to the Gulf of Mexico, while another large current sets over from the Cape of Good Hope to South America direct, and then it parts; one stream runs north to the West Indies and the Carribean Sea, and thence into the Gulf of Mexico. The south stream runs below Pernambuco, up along the South American coast, and is kept inside of the Falkland Islands through the Straits of Magellan, thence up by the coast of Chili and Peru, and then falls again into the Bay of Panama to commence another circuit of the globe. The north current on the American coast passes along North America to the coast of Europe, to Norway, then east of Spitsbergen Islands, thence into the Arctic Ocean, north of Russia, which greatly modifies the climate of the Arctic shores, and thence out to Behrings Straits, down the coast of California to the Bay of Panama. It is the law of motion and attraction which is the principal cause of the *ocean tides.* The waves wash the American and Asiatic coasts, and are deflected back to the East, to the opposite shores in unceasing motion, like the pendulum of a clock, keeping one eternal time by tides like the motion of the earth in her orbit and on her axis, hence the high tides of the western sides of the ocean and the Eastern shores of the continents, and that so rapid is the tide that on the occasion of the great earthquake at Japan, in 1855, the surge or tidal wave reached from Japan to California in five hours.

Along these great currents in the ocean the vegetable and animal matter, which fills the ocean, finds its great deposits. When life becomes extinct they become the feeding grounds of the living races, hence the great deposits of *guano* on the western coast of Peru, hence the great feeding grounds of fish on the Grand Banks of Newfoundland, Scotland, Norway, California, Oregon, Behrings Straits, and Brazil, hence the sea eels or the *Beach La Mer* on the coast of New-Holland, and at the Fejee Islands; hence the great whaling grounds on the coast of America and Brazil, in the Okhotsko Sea, in the Indian Ocean, and on the coasts of Africa; hence the sperm whale only is found within the tropics where an abundance of food of a peculiar kind is supplied to produce the white flesh and bone of the sperm whale.

The largest of the Chincha group is two miles in length, and a quarter of a mile wide; this contains only a small quantity of guano. The most northerly is the smallest, being about a mile in length by half a mile in breadth. Guano on this island is 250 feet deep. This island contains a Chinese settlement of Coolies, about 1,000 in number, who are employed in digging guano and loading the vessels. A task is given them each day, and if the gang fail to get out the given number of wagon loads of two tons each a day, their bondage is continued a longer period to make it up; so many months or days being added as wagon loads are wanting.

The Coolies are cheated into the belief that they are to be shipped from China to California and the gold diggings, and are further deceived by the offer of a free passage. The knowing Chinese, or the *mandarins*, ship them; the shipmaster carries them to the Peruvian coast and sells the cargo of living Chinese to the Peruvian Government for his freight money; all this time the Chinamen are kept in irons and confined below in the hold of the ship. The Peruvian Government purchase the cargo of living Coolies, paying the Yankee or English captain a round sum for his care, dilligence and labor in stealing Chinamen from their homes to be sent into the *guano mines* of Peru for life, or for five or seven years, and to be held in bondage or peonage to pay their passage to the glorious land of the *Incas!* Once on the islands a Chinamen seldom gets off, but remains a slave, to die there. The guano is hard and firmly imbedded in strata on the islands, and can only be broken up with the pick-axe and crow-bar; it is then broken and shoveled into the wagons and rolled into the shutes of the vessels and then stowed in the hold of the ship as cargo in bulk, in which shape it is sent to market all round the world; but it loses much of its ammonia in the transportation and exposure to the atmosphere, and is often adulterated with earth. The guano, when pressed into the hold of the ship is very offensive; the seamen of ships do not go below to trim the ship or to stow cargo; this is done by the native Peruvians, who strip themselves naked, fasten a sponge or a mop of hemp over their mouth and nose, and cover their eyes with a thin gauze, and work below to stow cargo; generally the men below can not work longer than from ten to twenty minutes before they come on deck to catch a breathing spell, when another gang go immediately down below to work and repeat the same operation every fifteen to twenty minutes. These stevedores are paid by the Peruvian Government to stow the cargo at the rate of only one dollar every 500 tons of cargo; this is again a charge on the ship, and amounts to about twenty cents for 100 tons cargo stowed.

The smell of the guano when stowed in the hold of the ship is strongly like quick-lime and hartshorn combined; indeed it is mostly a carbonate of ammonia; the ammonia may have come from a chemical action of the atmosphere, working on animal matter, lime and soda. The animal matter, nitrate of lime and saltpetre, has much to do in the composition of guano at these islands. Such is the opinion of our informant.

No person can go upon or come away from the islands without a pass, as they are guarded by more than one hundred armed soldiers belonging to Peru.

The Peruvians send all their prisoners of state into the guano mines, say about two or three hundred, where they are let out to work by day, and at night are shut up in their cells with only two meals per day.

The prisoners are given twenty-five cents a day by the Government for their support, out of which they are to clothe and feed themselves, and when they can spare a little money they keep a woman; they generally make out to provide themselves with wives, or female companions who have been permitted to go to the islands and hire themselves out for work and prostitution. These are mostly Indian women, who are natives of the country.

There is no fresh water on the islands, and each vessel is compelled by law to carry a ton of fresh water there for every 100 tons burthen of the ship. The oldest captain in the fleet, from each nation, is appointed Commodore *pro tempore*, hoists his flag as such on his ship, where all disputes are settled. Indeed, the municipal laws of the islands and of the fleet are decidedly of Yankee origin.

The islands are composed of new red sandstone, the guano is (not much of it) composed of *bird dung*, but is composed of the mud of the ocean. That brought from Peru is so.

Sea birds and seals come upon the islands when the people are not at work, but it does not appear that their dung or decayed bodies are more than a foot deep on any of the islands. Fish are taken in great quantities about these islands, as are also seals, which come there in large shoals; sea-lions also abound. The composition taken from the islands called guano is stratified, and lies in the same form it did before it was lifted up from the botton of the ocean. Our informant says that a geological examination of the islands will satisfy any man that what the guano ships are bringing away from these islands is a very different thing from the dung of birds or decomposed land animals.

The whole Peruvian coast opposite these islands is of the latest geological formation, and seems to be volcanic. The Chincha Islands evidently have been thrown up from the bottom of the ocean with their guano on them. The bottom of the ocean on the west coast of Peru contains vast deposits of guano. An island during an earthquake rose up in the bay of Callao, some years since, from the sea, containing guano four feet deep, the formation the same as the Chincha Islands.

The average depth of the ocean is said to be about ten thousand feet, while the average height of all the land above does not exceed one thousand feet. The proportion of land to water is only one fourth of the surface of the globe, perhaps less; now as the ocean is the great basin into which most of the animal and vegetable matter from land and sea is ultimately deposited, and there forms guano, we must look for fertilizers in the deposits of the ocean; and from this source they come. Also the mud of the River Nile, in Egypt, is very fertile; this is so because it is largely composed of animal matter; so is the mud of the Ganges, of the Amazon, of the Mississippi, and of all the great rivers; so is the mud deposited from our cities. The nitrogen from vegetable and animal matter carried down the rivers afford great quantities of food for the fish of various kinds that visit the mouths of the streams, hence the great feeding grounds for fish at the mouth of the Columbia river, the La Plata, the Amazon, the Chesapeake Bay, the St. Lawrence, the Amoor in China, and other notorious streams. So are the deposits of animal matter in the ocean, which raised up have formed the Chincha Islands—guano.

The composition of the guano at the Chincha Islands is evidently marine *animal exuviæ* mixed with lime and soda, which gives out carbonate of ammonia in large quantities when broken; much of the fertility of the guano is lost by exposure to the atmosphere even before it reaches us. The white and blue mud found in our creeks, bays and harbors along the Atlantic coast, is one of the most valuable fertilizers. This mud is mostly composed of animal matter and marine exuviæ. Millions of tons are at hand to be transferred to the compost heap.

This should always be under a shed to preserve the ammonia, and this creek and bay mud will prove itself adequate to the renovation of the fields of the Atlantic coasts. The more animal matter which can be worked into artificial manure, renders them more fertile for vegetable life. Whatever produces ammonia produces fertility.

A snow storm in April is said to be as good for a farmer as a top dressing of manure for his farm. When great storms of snow come down on the earth in winter, we always find heavy crops of vegetation succeed in the summer following. The reason is, when the snow crystalizes in particles in the heavens, they absorb ammonia from the atmosphere, and bring it down to the earth.

The ammonia liquor is the great stimulent for both animal and vegetable life. The reproductive powers of animals contain a superabundance of ammonia, and without it nothing is fertile, but all is barren. During drouth time we have often witnessed attempts at irrigation, but the growth of vegetation under irrigation is small indeed compared with the growth during the same length of time under the operation of rains and showers. The great rains within the tropics produce an abundant growth of vegetation. The water from the heavens brings down large quantities of ammonia.

The guano along our coasts, at the mouths of our rivers, and in the bays and creeks through the Atlantic seaboard, is vast in quantity, almost beyond calculation. This can be transferred to the barn-yard at one half the cost of Peruvian guano, and will prove an invaluable manure. On the south side of the north island, the rock has much slag and *iron ore*, and volcanic cinders in it. On this island is the most of the guano which is found at the islands, and it is stratified in its bed. There are many small islands composing the Chincha group, where birds and seals resort, but very little guano, comparatively speaking, is found on them, and this of an inferior quality. They are not covered with the real guano, but with a deposit of bird lime, or dung, and dead animals, small in quantity and thickness. The seals, when they become sick, come on to the islands to die; they are much inclined also to come on to the shore when not disturbed, to bring forth their young; so does the animal called the sea-lion, which is an *enormous seal*, strong and ferocious. Whales and black-fish are plenty around these islands, and come in shore to clean themselves of the barnacles which accumulate on them.

The sea-elephant is a very large species of seal, from which the sea-elephant oil is taken, and occasionally it appears at these islands; the fish around these islands are eels, in a great abundance also a species of bass, and rock cod, herrings, the fly-fish, the shad-fish, or a fish very similar, a large shell fish, like sea snails and cockel, are found in great quantities around these islands. The whole ocean is alive with inhabitants. This resort of fish brings the seals and birds into these waters in great quantities, which makes this sea their feeding grounds. The same cause on the western coast of Peru, as those on the Grand Banks of Newfoundland, produce the great shoals of fish at the Chincha Islands.

Messrs. Gibbs & Bright, of Liverpool, have a lease of the guano islands from the Peruvian Government for five years, which expires in 1857, but they expect a renewal. This house pays the Peruvian Government about $4 50 a ton for the privilege of taking all the guano from the islands, the Government furnishing the men to dig the guano.

The ships that load at the islands are mostly ships chartered to carry a cargo, or are sent there by the owners to take away a cargo bought of Gibbs & Bright, who have the entire monopoly of the trade at the islands.

The day will come when the guano at these islands will be drudged up with boats, like mud from our rivers and harbors.

Alanson Nash,
36 Beekman street, New York.

## Did You Ever?

We feel just like telling our farmer readers a story. Some days since a gentleman (we are not so sure of that, a man at any rate) came into our office for the purpose of getting a machine of his, for pulverizing the soil, put before the public, with our commendation. We were out at the time. Our associate told him precisely as we should, had we been on hand, that we could commend nothing till fully satisfied of its excellence, that if he could give us proof that it would be for the farmer's interst to purchase his implement at the price he would sell it for, we would speak of it in fitting terms.

He thought it a prodigious pity that we should have more sympathy for the rich farmer, selling his produce at enormous prices, than for the poor inventor, struggling against poverty, dear bread, and a hard-hearted, unbelieving world, too stingy to throw away the old ploughs and get something better. But the chapter ended, and he left in a dudgeon, as we have since learned he before had several other offices.

A friend of his invited us, some evenings afterwards, to call with him at the inventor's rooms and see him. With some reluctance we called. It was not over and above pleasant to have our associate abused for the very thing we would have done. Nevertheless, we bore it like an Atlas; heard the whole corps editorial used up;

there was not a decent grease spot left; and were told that we were not a whit better than the rest, simply because we were unwilling to commend a new machine, till we could see it, know how it would work, whether it could be had at a price within the profits of agriculture, &c., &c. We made some feeble efforts to show that editors, high and low, Greeley, Bennett, and all the rest, down to our humble selves, are only about as wicked as the rest of mankind. But it was no go. Volubility and loud talk are weapons, from which we think the wisest part of valor is to retreat.

We have told this story for the sake of the moral. The moral is this;—The farmers being industrious, working men, always at home, more or less out of the centers of the earliest news, are very liable to be jockeyed by a set of men who have their foci of operations in our larger cities; and the consequence is, either that they are compelled in self-protection to resist all innovations, and so to hinder the progress of their own most important art; or, if they catch the spirit of the age, and adopt proposed improvements promptly, there is a strong chance for them to be sadly mortified and deeply injured—*cheated* (we don't know a better word for our purpose) out of their hard earnings, by gross imposition. It is not the mechanics who do this. The mechanic is the farmer's best friend—makes his market, is willing to do his work at a reasonable price, and to exchange commodities at fair rates, to live and let live. It is not the inventors, as such, that do the mischief. No man should be held in higher repute than the honest inventor. Nor yet is the manure vender necessarily a rogue. That a good many rogues have got into that business, does not prove that all are such. The business of transfering city offal to the farms is a good business for all parties, if honestly conducted. There is room in it for a large number to operate, and yet so as to leave the country the richer and the city the cleaner.

Who does not know that not one in ten of all useful inventions remain long in the hands of the men who did the brain work? And nearly all useless inventions, either die quick, and are out of the way, or they fall into second hands. It is mainly those who are ever ready to jump on another man's horse and throw the owner off, and not the original inventors, who cheat mankind fore and aft with patents. We will stand up for the inventors, for we want the world to go ahead and to do things in a better way, whenever a better way can be found. But let us ask them one question;—why is it that so many of you fail to hold your own inventions and to reap the reward instead of leaving them to enrich sharpers? Is it not, in too many cases, (we by no means say always,) because you hold the privilege to use your machines or your discoveries so high, that the world will wait longer before it consents to the bargain, than you can wait for your money? We would say to manure venders and patentees, do not be too grasping. Be willing that the buyers, and those who use your wares, should make money as well as yourself. A deal of guano has been imported into this country. Money has been made on it. But who has made it? The shipper; the vender; we wish we could say the farmer; and doubtless some farmers have profited by it; but not the farmers who have used it, as a whole; for they have bought so much stuff for guano, that was something else, that the real article, as a whole, has cost them over $100 a ton, and the profit has been either small, or out of pocket. The merchants, the middlemen, some of the inventors even, are grasping. They object to a fair division of the profit. Give them a sudden fortune, and they do not care whether God or the devil takes care of the rest.

A case in point;—there is now in this city a plough, digger, spader, pulverizer, or what you choose to call it, seeking buyers at six hundred dollars. The holder of the patent assures us that it will do wonders. O! yes, it can be drawn by a single horse, or a man even, so light is the draft, and it will do more work and better, in one day, than the strongest team with a plough in three, and then it will never get out of repair. The real facts are, that it has some excellent points; but in our judgment, formed from a drawing only, the draft would be entirely too heavy for anything short of a steam power, and the machine always out of running order, except in the most feasible soils.

That the holder of a patent should indulge in expectations, more fanciful than well formed, is nothing strange; nor is it very strange that this man should run away with the idea, as he does, that he has an invention, which the farmers can not get along without, and so will be glad to pay his price, whatever it may be. But let us see how he proposes to divide the profits. He informs us that he can build the machine for $150, and from that to $200 for the very largest and best, but that not one shall be sold short of $600. Now if this man has a machine, which all who cultivate the ground must have; if, as he says, no farmer without it can compete with those who use it, is it generous, is it right to hold it quite so high? Supposing one million, or about one in five, of the farmers in this country, should pay his clean profit of $400, what would one man do with so much money? Or, if he could carry thirty times as much as Jacob Astor ever possessed, would he feel any better for taking so much from the farmers of his country?

We are very far from wishing to compare all who seek the farmer's patronage with this man. There are hosts of implement makers, seedsmen, manure venders, and patentees, who are willing to deal fairly. But there are others, men who seem to live by honest labor, and to become rich by slow degrees, who are seeking to gouge the laborious, home-keeping cultivators of the soil. They love the farmer no doubt; but they love his money-bag a great deal better; and they are not satisfied to deal with him on terms equally beneficial to both parties; but are managing to make more rich in a year by their trade, than he can in life by constant labor. The evil is a great one, because it forces the farmer to be so on his guard against imposition, that he almost unconsciously falls into an attitude of resistance to real improvements. This unceasing scheming in our cities to gouge the farmers is what more than any other one thing now impedes the progress of agricultural improvement in the whole country. It is a crime against patriotism and humanity, and ought to be intensely detested. —Ed.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Rearing and Feeding of Swine.

Messrs. Editors:—It has struck me that I might, in some small measure, aid the cause you advocate, by communicating my views on the rearing and feeding of swine; a topic recently discussed at the meeting of Legislative farmers in Massachusetts. Every farmer should raise and keep a few hogs. In themselves they are valuable, essential in the feed of his family. No man can get along comfortably without the use of a certain quantity of pork. All the parts of the hog will be found convenient in their domestic arrangements. They can be reared and fed without much extra expense, especially on a farm where the dairy processes of making butter and cheese are carried on. But what I would paticularly notice in relation to the hog, is the benefit of his services in preparing fertilizers for their fields. Let a farmer keep half a dozen hogs, and take care to supply them well with material for the making of manure, from the swamp, the meadow, and the road-side, and I hesitate not to say that the value of the manure made by them, at the close of the year, will be quite equal to the value of the meat, even, though it bring, as now, 12 cents per pound. How can the farmer apply some portion of his leisure hours to better advantage, than by looking after such a family of hogs? I remember this was always done on the farm where I was brought up, and they found their account in so doing. What breed of hogs is to be preferred? For a time the Suffolk, with their short legs, round and plump bodies, have been all *the go*; but since it is ascertained that their meat does not cook well in the pot; that there is much uncertainty in procuring fair litters of pigs; and that their growth costs more a pound than many of our native hogs, their admirers have become few and far between. I heard a man of much experience say, that he would sooner grow the common hog at *ten cents* the pound, than the Suffolk at *twenty-five cents* per pound. If this be so, the Suffolk will go down, for no man will continue to grow pigs for their *beauty alone.* Beauty is of value, but utility more so.

ESSEX CO., Mass. P.

FOR THE AMERICAN FARMERS' MAGAZINE.

## In Health Prepare for Sickness, in Summer for Winter.

MESSRS. EDITORS:—Experience is a good school, although we too often pay a high tuition for that branch of education. The experience of last winter has proved such to many a farmer in this section of the country; and it has taught them a lesson that they will not soon forget. It has been the practice of many to put up just what hay they thought would possibly do by letting their cattle run in the stalk field after the corn was picked. Here they would keep their cattle until they had eaten (because they were forced to) everything they could eat, of the frost-bitten leaves of the cornstalks, before they would feed any hay or even corn. The winters previous to fifty-six and seven have generally been very mild in this portion of country, so that it has required but little care and attention to winter stock. Many prophesied an open winter last fall, and for that reason laid up but a small portion of feed for their stock, cut up but little if any of their corn fodder, but left it for them to pick for themselves, as heretofore.

What has been the consequence? Winter set in very early, and very severe, with a heavy body of snow, so that the cornfield that was designed to keep the cattle for a month or more was entirely buried under snow, and remained so until the last of February. The small quantity of hay that many of them had on hand was entirely fed out. The straw, when the wheat was threshed off from it, was thrown into a pile, and of course was of but little use. After the last of January, or the middle of February, many were out of feed, especially those that were too lazy or negligent to cut hay for stock; and the result was that many of them died.

When I was quite young I was sent from home, owing to the misfortune of having a poor father, to "pick my own living," and as I had the good fortune to get a good place, I stayed there for fourteen years, and during that time my "boss" told me, when I went for myself, to be sure and "lay in a good supply of fodder; to use every thing that would make good food for cattle, and to be sure to have enough in the fall to last through the winter." This advice I have followed. Last August I cut a good supply of hay, and then cut and secured my corn fodder, so that I had sufficient to last me through a long and severe winter.

This country has taken more curses for its backward spring "than you could shake a stick at." Every one has growled because he has not had feed enough to keep his stock through the long winters, and it is the "meanest country in the world." Who is to blame? Is the Almighty the one to find fault with because we have not feed enough, when he has furnished us thousands of acres of grass, and all we had to do was to cut it and put it up? *No;* it was our own negligence. There was the grass, and why did we not cut it?

Last winter was a severe one. Let us take heed from it, and never let another fall pass over our heads without putting up plenty of fodder, as long as there is plenty of it to cut. Let us take care of our own fodder, cut it up, and secure it, and learn a lesson from the past to guide us in the future. One million of dollars would not cover the money that has been lost by cattle dying for the want of feed, and this in the State of Iowa. Iowa farmers, lay in fodder this coming fall for the extra forty days of winter. Do not say as did Ezekiel, "can these dry bones live?" but say "that these lazy bones shall move." Mr. Editor, may the past winter teach Oliver Shiftless and Mr. Negligent to prepare while in health for sickness. May it teach Mr. Let-go-to-waste to take care of what he has got, and not let his dumb beasts starve. Simon Go-to-town-too-often, stay at home, and put up feed enough to winter your cattle. Do not find fault with Him who makes the grass grow, because you are not at home long enough to cut it. It is your fau't, not *His.*

Farmers, and pretend-to-be farmers, take heed from the past, for another winter will soon be upon us. L. S. Spencer.

Lyme, Warren Co., Iowa.

The writer of the above said to us in a private note, "This was written in haste; please put it in shape." We have made the fewest possible alterations, because we like the shape as it is.

Not all parts of the country, like that of our correspondent, have grass enough, and to spare, nor do all parts give hay for the cutting. But where the winter food can not be increased at pleasure, the stock should be diminished, as good sense and forethought may decide. It is bad policy and worse humanity to begin our winters with less feed than stock. Every farmer should be prepared for a hard winter.—Ed.

## More about Guano.

Is it of any consequence how we pronounce this word? Not much. It will make the corn grow under one name as well as another; and it will cheat the farmer as badly, if he buys it of a rogue, under one pronunciation as another. Still it might be as well to pronounce the name of an article so common among us correctly. No one of us says *lan-gu-age*, but *lan-guage*, running the u and a into one syllable. Why then should we say *guan-o* or *gu-a-no?* This is murdering the Spanish Queen's lengua and our own language to boot. Make the word of two syllables; pronounce the *gua* precisely as in the English word language; but give the a the sound of a in father, and not the flat sound, and you will be right. So much for the word, and now for the thing.

Our object is to give the farmer some tests, by which he may form an opinion, not very accurate perhaps, yet better than none, of the value of an article that may be presented, with this name. It has become very clear, we think, that no guano yet offered, except that of the Chincha Islands, nor that unless it comes to the farmer very direct nor always even in that case, is worth buying. There may be honest dealers in other guanos; new guanos may yet come into the market; the American guano company in this city has an article which *may* prove good, and they *may* offer it, for a wonder, at a price which would be fair, as between them and the farmer; but as the case now stands, we would advise the farmers not to buy a dollar's worth of any guano except the Peruvian, nor that without the utmost care to get a pure article, inasmuch as it is quite certain that no other will pay at present prices. The truth is, notwithstanding interested efforts to prove the contrary, that the Peruvian guano is not all gone yet. There is considerable of the same sort left, and we should not be sorry to see the holders so brought to their stomachs, as to be willing to dispose of it on the broad principle of "live and let live."

If the buyer is shown an analysis, which he can make up his mind to place confidence in, let him look specially at the figures representing the organic matters containing ammonia, those representing phosphates, and those expressing the proportion of water. In a first rate guano, there will be little water, which, although a good thing for vegetation, we could hardly afford to buy and transport; not more than 20 or 25 per cent of phosphates, which, if good fertilizers, as they certainly are, especially for permanent amendments of soils, are not good enough to be bought at guano prices; and as much as 50 per cent. of organic matters, containing ammonia. Or if, instead of the organic matters, the amounts of actual and potential ammonia are stated, these should be large, not much less than 20 per cent., if you are to get your money back, as these are the only ingredients for which anything like $60 a ton, or even half that, can be afforded; and we think that the buyer would do well to ascertain, if he can, that the analyst is not a very particular friend of the seller.

But if you are going to buy largely, it would be well to take home a few lbs. as a sample, and experiment with it yourself. Put an accurately weighed lb., spread thinly upon a sheet of paper, into an oven nearly hot enough to bake bread. This should be done soon after the guano is taken from the bulk, as its tendency is to absurb water from the air and become heavier by keeping. If it looses largely, in weight, although the loss might not be wholly of water, yet this would indicate that it contains more water than you would care to buy at a high price.

A general rule is, that *the lighter the color, the better the guano.* This may not in all cases be true, especially with small samples. We have seen those, which were nearly white, and yet not very valuable. But lightness of color is a good indication as far as it goes. It gives at least a strong probability, that the guano is not so far decomposed as to have lost its organic matter.

Rub a pinch of the guano, with as much quick-lime, slightly moistened, between two shingles or bits of board. If it gives out a strong pungent odor, affecting the eyes, causing one to sneeze, and producing a dense vapor about a feather, first dipped in strong vinegar or muriatic acid, and then held over it, it is probably good. If it fails to do this it is certainly inferior, and may be set down as not worth the present price of Peruvian guano.

Next, put a little, say a teaspoonful, into a pint of pure, soft water. Stir it about for some minutes, and then pour off the water with the fine matters floating in it. If any considerable coarse matter remains at the bottom, it is a bad indication. The coarse sediment remaining in the vessel is worth nothing, and much of the finer parts, that flowed off with the water, may be, and probably are, worth but little. But if the guano seems nearly all to dissolve, so that the water flows off but little riled, and almost no sediment is left, the indication is avorable, though not alone to be depended upon.

You might now heat a portion to redness, and throw what is not burned away, into dilute muriatic acid. This can be obtained at almost any apothecary's; one part of acid to three or four of water would be a good proportion. If nearly the whole is not dissolved the indication is a bad one. In the ash of a high priced guano, there should be nothing, or next to nothing insoluble in dilute muriatic acid.

If, then, you are going to purchase a high-priced guano, relying on analysis, insist that it be highly ammonial, not very phosphatic, and little watery. If you trust to your own judgment, look for that which is nearly dry, which is light in color, stings the eyes and tingles the nose when rubbed with quick-lime, leaves little sediment when washed with water, and almost none when burned and treated to muriatic acid.

In what ratio the value of guano diminishes, as it fails to give the above favorable indications, would be hard to say. But we very much suspect that a good many American farmers have paid considerable sums for guanos sold under false names, and not so valuable, ton for ton, as the sheep manure in their own folds, which they perhaps, though we think unwisely, would have sold for one dollar a ton.—Ed.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Mowers.

Messrs. Editors:—I regret my inability to witness the entire operations of the mowers presented at Syracuse; for I consider the experiments undertaken by Col. Wilder and others, of the first importance to the farming community. They have long been waiting with anxious solicitude the perfection of this class of implements. But so long as those who construct them are more anxious to serve themselves by the *sale*, than the farmers by their *use*, we may expect to postpone their *maturity*. There can be no apology in using *timber* or *iron* of *bad quality*, or *bad skill* in their construction—nothing but the best of material and the best of art will answer for such implements. I will not presume to speak of particular implements, because the Committee themselves are much more competent to do this. For *three years* I have been waiting to see a machine that can be relied on, to operate through the day without giving out in some of its parts. Nothing can be more annoying to the practical farmer, who is not expected to be expert in all the mysteries of mechanics, than when his horses are trained ready to move, and his grass is grown ready to be cut, and the sun is shining ready to cure it, and his hands are in readiness to operate, to have his implement fail in a manner that he can not repair—and for reasons that should not have existed, if the maker had been honest. A few such occurrences will forever blast the hopes of the enterprise. I do not mean to charge upon the makers of farm implements, any greater degree of dishonesty than is to be found in most other employments. The fact is the all-absorbing desire to make money, and to make it without delay, is the bane of all healthy advancement. Too much credit can not be awarded to the highminded and honorable gentlemen, who have come together, from the East, the West, and the South, with a determination fully to understand this matter—and it is to be hoped that their perseverance, with the suggestions of honest Editors, like yourselves, will give the community opinions that will *stand the racket.*

Ever faithfully yours,

Brooklyn, July 17th, 1857. J. W. Proctor.

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## Underdraining.

The importance of a good drain under every post fence, is not generally understood. Wherever post holes retain water, they are sure to be heaved by frost, and the fence thrown out of shape; and the posts can not last so long, where they are alternately subjected to water soaking and drying. But if all the water which falls, passes immediately down into the ditch, it can not lie in contact with the posts long enough to soak them, and as a consequence, they must remain perpetually dry, and last for a long period. Robert B. Howland, of Union Springs, N. Y., who has used Pratt's Ditcher with success, found it cheaper to cut a ditch with this machine, in which to set the posts for a fence, than simply to dig the post-holes by hand, and he thus attained all the advantages of drainage besides a practice well worth copying.

A single suggestion on the efficacy of underdraining, on lands that do not at all appear to need it. It is a very good rule for determining its necessity, to observe whether water will *stand* in holes dug two or three feet for this purpose. If the subsoil is porous, the water will immediately sink away, and ditches would be wholly useless. But if water will stand 48 hours in the holes, draining is necessary to relieve the subsoil of this cold and chilling mass which fills it.

Now, if the surplus water in the soil and subsoil at the wettest period, is only equal to a depth of two inches, then for a ten acre field it would amount to more than *seven thousand hogsheads.* Suppose, therefore, that this field has such a slope as to give it what many would suppose a *natural* drainage—"not needing ditching"—"dry enough already"—then, in getting rid of these seven thousand hogsheads of hurtful water, it must, every gill of it, soak drop by drop, from one particle of earth to another, until it all passes slowly down, and almost imperceptibly from one side of the field to the other. No wonder that days and even weeks are required to complete the process, and to render the land dry enough to become friable and fit to receive seed, and promote the extension of the young roots of crops. Now, give this field a smooth tabular channel or tile, for every two rods of its whole surface, the shortest way down the slope; the water in the soil has then only about *one rod* to soak through the soil before reaching one of these drains, and most of it much less than a rod. When it reaches them, it shoots rapidly down the smooth descending tube, and in a few minutes has passed the boundary of the field, instead of being otherwise compelled to *soak* its weary way the whole 40 or 50 rods, or entire breadth of the field. This rapid discharge reduces the dryness in so short a time, as to surprise those who have never witnessed it, and to lead to the common supposition that the simple statement of the practical advantages of thorough underdraining, by those who have given it a trial, are wild exaggerations.—*O. Val. Far.*

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Danvers Town Farm, Essex Co., Mass.

Messrs. Editors:—Two years since, I had occasion to speak to the farmers in the State of Maine, of practical culture in Massachusetts,—and for want of something better, I told them what had actually been, within my own observation, in my own village. Friends Southwich and Shoves, two gentlemen of standing and means, having long acted freely in the capacity of overseers of the poor of the town, advised to the purchase of a farm for their residence, employment, and support. Accordingly, a farm of about 200 acres was purchased—situate about two miles from the population of the village—one half of which was covered with wood—the other half, poor exhausted gravely soil, and peat and sunless meadow—from which crops of the smallest pattern had been gathered by the former occupant. Many were reconciled to the purchase in the belief that the wood in a few years would pay for the farm. The wood was mainly cut at first, and taken to market, and then the treasury was relieved of the purchase.

After the wood was gone, a system of deep ploughing and full manuring was introduced. Some fifty swine were constantly kept to operate the materials gathered from the meadows and swamps. The offal from all the slaughter-houses of the village was secured for the feed of the swine. More than 200 cords of manure was made in the yards. All the liquids from the house, the stable, and the pig-yard, were conducted to the fields for grass. Meadows were ditched and drained. The hard lands were planted with corn, rye, and other grain, and crops of 30 bushels of Indian corn, 45 bushels of rye, and 50 bushels of oats, and 25 bushels of wheat, were grown to the acre. Hay, from three to four tons to the acre, has repeatedly been cut from the reclaimed meadows. So much for the application of industry and skill.

J. W. P.

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## Green-Manuring.

"If, instead of having the land exposed only to the action of the atmosphere, we crop it with a plant whose roots run in every direction for food; and if, when this plant has arrived at considerable growth, we turn it into the surface-soil, we have not only enriched the latter by the elements derived from the air, but also by matters both mineral and vegetable, fetched up from the subsoil. The plant thus acts the part of collecting the nourishment for a future crop, in a way that no mechanical subsoiling or trenching could effect."— *Way.*

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FROM THE N. E. FARMER.

## Utility of Birds.

Every one who has paid attention to the matter, knows that even crows and blackbirds are productive of more good than harm, and that the vast increase of late years of destructive insects, is owing almost entirely to the wanton destruction of birds which are not even legitimate game.

In Japan the birds are regarded as sacred, and never under any pretense are they permitted to be destroyed. During the stay of the expedition at Japan a number of officers started on a gunning excursion. No sooner did the people observe the cruel slaughtering of their favorites than a number of them waited on the Commodore and remonstrated against the conduct of the officers. There was no more bird shooting in Japan by American officers after that; and when the treaty between the two countries was concluded, one express condition of it was, that the birds should always be protected. What a commentary upon the inhuman practice of our shooting gentry, who are as eager in the pursuit of a tomtit as of an eagle, and indiscriminately shoot everything in the form of a bird which has the misfortune to come within the reach of their murderous weapons.

On the top of the tombstones in Japan, a small cavity or trough is chiseled, which the priests every morning fill with fresh water for the use of the birds. Enlightened America should imitate these customs of the barbarous Japanese, if not by providing fresh water for the feathered warblers, at least by protecting them from the worthless louts who so ruthlessly destroy them. Unless something is done, and that speedily, our insectivorous birds will be wholly exterminated, and then farewell to fruit-growing. A thousand plans have been suggested for the destruction of the curculio, all of which have proved worthless. We have one which we know to be infallible—"protect the birds."

The swallows are the natural enemies of the swarming insects, living almost entirely upon taking their food upon the wing. The common martin devours great quantities of wasps, beetles, and goldsmiths. A single bird will devour five thousand butterflies in a week. The moral of this is, that the husbandman should cultivate the society of swallows and martins about his land and buildings.

The sparrows and wrens feed upon the crawling insects which lurk within the buds, foliage and flowers of plants. The wrens are pugnacious, and a little box in a cherry tree will soon be appropriated by them, and they will drive other birds away that feed upon the fruit, a hint that cherry growers should remember this spring, and act upon.

The thrushes, blue-birds, jays, and crows, prey upon butterflies, grasshoppers, crickets, locusts, and the larger beetles. A single family of jays will consume 20,000 of these in a season of three months.

The woodpeckers are armed with a stout, long bill, to penetrate the wood of trees where the borers deposit their larvæ. They live almost entirely upon these worms.

For the insects that come abroad only during the night, nature has provided a check in the nocturnal barn owl, which take their food upon the wing.

How wonderful is this provision of Providence for restraint of depredators that live upon the labors of man, and how careful we should be not to dispute that beneficial law of compensation by which all things are preserved in their just relation and proportion.

## Onions.

Mr. Brown:—In your March number of the *Farmer*, I noticed a request of a subscriber for information respecting the culture of onions—and an invitation from yourself to any one who may possess such information to impart it. I perceive, also, in the same number, a communication from Hollis Chaffin, of Providence, R. I., which purports to contain the secret of the whole business, but which, I am sorry to say, I have found to fail in my own case. Having tried almost every experiment in the growing of this vegetable, I feel some confidence in addressing your correspondent on the subject, and assuring him of *one* successful—though it may not, for *large* crops, prove a very profitable mode of raising them.

It was in 1848 the maggot first appeared among my onions, almost entirely destroying the crop, which led me the following year to test many of the modes recommended by agricultural journals for protecting the same. All these plans proved abortive. The next year new experiments were tried, among which was freeing the ground of insects by great fermentation, but this also failed of success. A small crop was raised the subsequent year on rockweed, well decomposed, mixed with soil from an upland pasture. At that time, as none of my neighbors could succeed in the least, I imagined I had discovered the "secret," and presumed that a saline manure was all that was required to prevent injury from maggots, but in this I was mistaken, for the very next season the principal part of the crop was destroyed by this pest.

Speaking one day with a person who had witnessed a mode of raising onions pursued in Nantucket, I was induced to try the following experiment, which I found to succeed. I marked out my bed the size I desired it, and threw out the soil to the depth of eight or ten inches. I then filled in with clam shells, which I then had leveled, and beat into a solid bed with a heavy maul, then slightly covered with rich soil, say *less* than one inch deep. In this I planted the seed, and ever since have found no difficulty in raising fine onions entirely free from the maggot.

The origin of the maggot I have spoken of before in another journal, but for the benefit of such as are unacquainted therewith, I may repeat the substance of what I then said. Almost invariably where a plant droops, it will be found to contain one or more maggots. Now by carefully removing the earth around the plant, will be seen a small insect, which will run from one lump of dirt to another, making great

exertions to secrete itself, which if allowed to do, it will work its way deep into the soil, but if not permitted to hide, will fly away. This insect unquestionably deposits its egg in the envelope of the stock, just under the surface of the ground, and next to the bulb, where it soon starts into life, and eating into the interior of the plant, works its destruction. This pest will not assail the plants where the fly can not penetrate easily into the earth. OLD ORCHARD,
MAINE, April 13th, 1857. *New-England Farmer.*

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## Drouth---Protection Against.

THE frequent stirring of soils between the rows, is undoubtedly a protection, and, in ordinary cases, a sufficient protection against drouth. The air passes freely through soils frequently stirred; and whenever air comes in contact with a body colder than itself, it deposits moisture, as in a tumbler filled with ice water at the dinner table, or in the particles of a soil at some inches depth, and consequently colder than the air above the surface. When the farmer sees his tumbler sweat, as it is sometimes expressed, he may be assured, that so it fares with the soil six or eight inches below a well-stirred surface, provided the soil were mellowed to that or a greater depth before the crop was put in.

Mulching is often an efficient protection against drouth. Straw, coarse hay, leaves, mold from the woods, chips, or even a pile of stones, laid around the roots of a newly-set tree, retards evaporation, and secures a moist condition for the roots. It is so with strawberries if the ground is mulched between the rows. Raspberries, blackberries, gooseberries, and many other crops may be partially protected in the same way.

But the great source of protection in our country is in deep ploughing. On a soil of any decent consistency, it would be impossible that a crop should suffer from the drouth, if the soil were pulverized to a depth of fifteen inches, because the lower portions of such a soil would retain moisture till long after the surface should have received new supplies from the clouds. If our readers are alarmed at fifteen inches as a depth which they despair of reaching, we think them too easily alarmed, but still we will meet them on *higher* ground. A field thoroughly pulverized to a depth of ten inches will seldom suffer from the drouth. Abundant and reliable testimonies have been published, going to show that fields ploughed to a depth of eight or ten inches have escaped unhurt, when other fields, equally well cultivated, with the single exception that they were ploughed but half as deep, have utterly failed of giving crops. That deep ploughing is a sufficient remedy against any ordinary drouth—any but the very longest and severest —is an *established* truth.—ED.

FOR THE AMERICAN FARMERS' MAGAZINE.

## The Cotton Crop.

EDWARDS, Miss., July 11th, 1857.

MESSRS. EDITORS:—We have heard an old adage since our youth, "what is everybody's business is nobody's business," which is verified daily. One may make a sweeping remark that interests a large community, yet no one takes upon himself to deny.

My mind is thus directed from seeing the circular of one of the large houses in your city, Messrs. Stewart & Co., as to this crop of cotton, and as yet have seen in only one or two of the many papers I see, any denial. The circular was gotten up for Europe, I think in May, and gave the information that the growing crop promised to be the largest ever known. Having loaned the paper out containing the article, I can not quote the language.

I have denied the fact in the *Delta*, published in New-Orleans, long enough to have been corrected by any Southern house of the same way of guessing, and now earnestly ask of you to permit me to deny in the positive the fact and to give *some facts, as are facts.* I know nothing of the house; it may be reliable and only guesses occasionally, or it may not be worthy of a planter's notice, but nevertheless, I have never known a wilder guess in all my life, unless when a certain gentleman went on to Washington City as a member of Congress, waiting there for his papers—*guessing* he was elected, when lo! the real member presented himself with his commission. Whether these gentlemen are interested in purchase or sale, I know not, but I *guess* I know they could not have guessed wider of the truth, even had they a wish to depress prices and then to buy. Now for the facts:

April 6, Ther. 31°, ice, sleet and hail last night.
" 7, " 32°.
" 12. Snowing fully two hours after daylight, and from near midnight.
" 23, Ther. 31°, ice.
" 24, " 35°.
May, 5, " 54°. Yesterday morn. 49°.
" 18, " 51°, 7 P.M., not above 53° all day, 51° at sun rise.
" 19, " 40°, 6 A.M.

I reside nearly east of Vicksburg, about lat. 32° 30′, about the center of the best cotton region. How much more unfavorable say 2½° north, I leave you to guess.

I never planted an acre of cotton over, before this year; did plant over 60 acres on the 22d and 23d of April, and should have doubled it, but risked—now I would have preferred that I had planted over 160 acres. Many of my friends living remote from protection of water, planted all cotton over, and some again and again, even to three and five times planting before they secured a stand. Now, up to May, where is the man that had even a show for a crop of any size, should it be one half crop ? Since that time, we have had rains and cold weather beyond any former experience of mine, and this is my twenty-seventh crop in Mississippi. Even in July, we have had a fire over one half the mornings, and blankets needed at night three fourths of the time. I learn from a large planter of Alabama, whom I saw to-day, that when he left there, June the 1st, his cotton was not up.

*Present prospects.*—The earliest bloom I had, and as early as any I have heard of near here, was on the 25th of June ; the earliest before, was on the 27th of May, the latest I have any record of in 27 years was on the 13th or 14th of June. Cotton is smaller than I ever saw it before. I have seen larger cotton and more blooms on the 10th of June, than now.

What the crop may be I know not, nor would I venture now to say, but this I do say, if that house will only insure me the average crop for '57, that my crop on same land was in 1852, 1412 lbs. per acre, I will make them safe in any way they require, to $2000. This is no idle remark. I am willing to pay $2000 to insure my crop, as to pay $50 to insure my gin house for four months.

Yours, with esteem, M. W. PHILIPS.

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## Editorial Correspondence.

*Hadley, Mass., July 1st.*—The cultivation of broom corn has been for the last quarter of a century a great business in this region, and for the most of that time has afforded a profit considerably above the average of farming. The process is much the same as for Indian corn. Similar land is required. Manures suitable for Indian corn are favorable to this crop. Less, however, is required, the broom corn being a less exhausting growth, and more of the stalks, where not taken to the paper mill, being left in the field. On the alluvial soils of the Connecticut river, free, arable, but not the richest, seven loads of barn manure to the acre will insure a good crop of broom corn in a favorable season, and leave the land in pretty good heart for a succeeding crop.

But alas, for the broom corn! Other regions are competing for the profits; and the farmers of these parts have caught the tobacco mania. For some years past the profits of this disgusting weed have been quite seducing. It is a little amusing to see how some of the fathers, who a few years ago would have consigned tobacco and all who use it, over, we will not say to whom, are now rejoicing in the enormous profits of the last year's crop. But it is no strange thing to hear men denouncing others, and then doing the same thing *for good pay.* We would only suggest that the growers of the weed are shrewder than the consumers; inasmuch as a pocket full of money is more desirable than a sallow skin, a nose turned into a chimney, a foul breath, dyspepsia and a swolen liver.

*Westfield, July 2d.*—This town has manufactured more whips probably than any other town not more than 200 years old. Its industry is of late turned very much to the growing of tobacco and the manufacturing of cigars. Puritanism itself has caved in. An agent of the *Homestead*, printed at Hartford, we learn, has promised $400 an acre clear profit on tobacco to all those who will take that paper. Whether the proprietors of that journal instruct their agents to tell great stories, is more than we know. But we were amused at learning how the device didn't take. Four hundred dollars an acre, said the agent to a rather fogyish friend of ours hereabouts. Too big talk for me, said our friend; never made but $200 an acre; can't take your paper. Said agent grappled with a sturdier farmer next time, one whom we have long known as manuring highly and getting great crops. His promise of only $400 an acre was met with astonishment. What do you mean, said this deep-ploughing, manure-stuffing tobacco grower; I have been getting $600 an acre; should'nt like to go back to $400; can't take a paper that talks of no more.

*Farmington, Conn., July 3d.*—We said in our last that we were exceedingly pleased with Allen's mower, as a piece of mechanism, which we should judge, by the manner in which it is got up, might work well, but that we had not seen it in operation. On the farm of Hon. John F. Norton, of this place, we have had the pleasure of seeing it work. The grass was stout; equal we judge to two and a half tons of hay to the acre. Much of it was badly lodged. But the machine, though drawn by horses not accustomed to it, and managed by a man then receiving from Mr. N. his first lesson in the business, worked to a charm, and cut the grass better than we could have believed it possible, in case of so heavy and tangled a crop.

*Port Jervis, N. Y., July* 8.—Having to choose between the heat of the city and the sun and dust of the country, we are again off. Port Jervis is a pleasant little place on the Erie Road, some ninety miles from New-York, grown suddenly, we believe, into being by railroad influences. The Fowler House in this village, by reason of its new and elegant building, its pleasant location, and the gentlemanly deportment of its keeper, H. Foster, Esq., might satisfy some of our readers, who like us, are willing for a while to forego the pleasures of city life.

*Binghamton, July* 9.—Here is one of our active growing villages; and to see how the agriculture of the region has improved since we were familiar with it some eighteen or twenty years ago, does one's heart good. Our journal comes largely to this place, and has contributed no doubt, with others of a similar kind, to promote the improvements everywhere seen. Pine stumps were the bane of husbandry, but the farmers have given them hoist, at very considerable expense, but wisely, as we think. Many of them had extended their long enduring roots over nearly a rod, so that by removing them the owner adds about that extent to his field, and gives himself a chance to make straight furrows. There is abundant use for the stump puller in this region, but not in this only.

*Syracuse, July* 10.—Here we are, at this city, to be honored by the first trial of reapers and mowers, under the auspices of the U. S. Agricultural Society, Hon. Marshal P. Wilder, Pres. Before leaving, we hope to learn something concerning these important machines, which we may communicate for the benefit of our readers.—Ed.

## The Camel Experiment.

A Washington paper has an interesting item relative to the Camels in Texas, based on recent information. The animals are doing well, the experiment of their acclimation having thus far proved successful. Those first imported are now transporting supplies between St. Antonio and Camp Verdo. "Three little ones were born in March and are thriving, and five or six more births are expected. From the reports of the conditions of the animals, at present, and through the eleven months that the first importation have been on the Continent, we may regard all doubts as to their acclimation dissipated, and that so much of the experiment is a *fixed fact.* The only remaining intermediate point is the character of the stock that may be produced. For this, time will be required. The officers in charge are, however, sanguine that it will fully equal that of Asia Minor and Africa, and may, by proper attention, be more highly developed."

## Lime.

To receive the greatest benefit from lime, it must be kept as near the surface as possible. The reason is this; its weight and minuteness give it a tendency to sink; and after a few years of cultivation, a large portion of it will be found to have gone beyond the depth of its most efficient action. Hence it is advisable to spread it on the ground after ploughing; then harrow it well in, and allow it to remain in grass as long as good crops can be had. When the lime is settled down beyond the reach of the common plough, the sub-soil plough will prolong its effect, by enabling the atmosphere and the roots of plants to penetrate the sub-soil likewise.

Important Agricultural Matter will be found in Brevier type. It was received too late for insertion elsewhere.

# Horticultural.

FOR THE AMERICAN FARMERS' MAGAZINE.

## Horse Radish, Prussian Culture.

Mr. Editor:—Horse radish is found in almost every farmer's garden, yet I dare say very few, if any, know how to raise and cultivate the same. To the gardner I think it is known, but to the most of the farmers it is not. I think it, therefore, my duty to send you a prescription, the way I have seen it done in Prussia. I think it an excellent plan, and I follow the same with mine.

Take the longest roots you can find, (the young ones I mean,) rub them with a cloth up and down, so it takes all the fibre off. About one-half inch at each end should not be rubbed, as the lower end is to make the roots for the next years' setting, the upper the leaves. Plant them in rows about eighteen inches apart each way. Lay them in the ground in a slanting way. They are planted with a stick made for the purpose, crooked at the upper end. The stick is stuck in the ground in the above manner, pulled out, the root then put in the hole left, and then tightened as any other plant. The bed should be planted with the roots all in the same direction. They should never be planted straight down. Keep them free from weeds, and pull the heads up once in a while during their growth to keep the heads from rooting. If the heads, in spite of this, make root, cut them off. In the autumn dig them up by starting at the first row planted and digging a ditch two feet deep, to get every particle of root, as if there are any left in the ground, they will be a nuisance. When the first row is out take the next, throwing the ground in the ditch left from the first row, and so on till it is done. If the ground is rich or well manured, the roots, that is those planted last year, attain the size of a man's arm. The young roots which are grown out of the lower end should be sorted by taking the best for next years' planting. The old roots which are for use can be kept in cellar in the winter. They might be kept all the year by putting them in sand.

If the rows are planted north and south direction, they should be dug east and west. Wm. K.

Bolivar P. O., Bolivar Co., Miss.

## Vegetable Garden.

Read the following reminders, from the *Horticulturist* for June, by William Sanders:

The beneficial effects of mulching to transplanted trees is well known, and very generally practiced. Its effects in the vegetable garden are no less striking. The mowings of short lawn grass, rakings of leaves, &c., thrown around and over the roots of egg-plants, or between the rows of peas, and other crops, will be found of great service during dry weather. Previous to applying it, the soil should receive a deep hoeing or forking up; if covered immediately afterwards, surface evaporation will be retarded, and the bad effects from heavy rains dashing on the surface prevented. Green vegetable matter, when used as above, should be spread very lightly; otherwise injury may result from fermentation.

Thin out the rows of beets, carrots, parsnips, &c., as soon as the crops are fairly advanced; nothing is gained by defering the operation too long, but much loss if the plants are crowded, as they will grow weak and slender; thin them to stand six inches apart.

*Asparagus* beds ought to be kept clean. Young plantations should not be cut very severely, as it will weaken the plants. The green portion only of this vegetable is fit for use; there is no occasion to cut below the surface with a view of getting it white. It is strange that white asparagus should ever be brought to market, and stranger still, that horticultural societies should award it a premium in preference to equally well known green samples. Water, with salted rain water, in the proportion of two ounces of salt to a gallon of water; this is preferable to sowing the salt over the plants.

Pleasure Ground and Lawn.—Frequent mowing is necessary to preserve a neat lawn; mow it when damp and clean the grass cut thoroughly off with the patent grass rake.—Lawn mowing machines are now constructed which economize labor and leave a beautiful surface. Lately planted trees should be secured from swaying about in the wind; they will grow better if the soil round their roots is kept clear of weeds. Trees fairly established do not require this treatment. It destroys the harmony of the lawn when the grass does not grow close up to the stems of the trees and shrubs. For the same reason all grass edgings should be kept low; nothing is more unsightly than deeply cut edgings to roads and walks, although they should in all cases be well defined and neatly trimmed.—*Horticulturist.*

## A Small Field and a Large Yield.

Mr. Isaac Fairchild, keeper of the Eagle Hotel, at Cortlandville, N. Y., and cultivator of a ten acre farm, or rather garden, tells us that last year, on one-eighth of an acre of a deep alluvial soil, heavily manured, he grew 400 bushels of carrots; that they were sowed in rows nine inches apart, thinned to four inches in the row, the spaces being carefully filled, so as to leave no vacancies; and that although he ploughed but ten inches deep, the roots, owing to the richness of the soil, extended to twice that depth, and some of them more, actually measuring two feet in length, and from two to three inches through at the large end. Mr. F. does not claim that he saw the measurement—says that he took the statement of the men who harvested the crop, and thinks, what we very much suspect may be true, that possibly they may have enlarged the number of bushels, by carelessly allowing the roots to fall crosswise into the measure—influenced perhaps by a desire to make as large a story as the case would admit. Now four carrots to the square foot, according to his mode of planting, would give 174,240 to the acre, making no allowance for vacant spaces; and if the size were such that 54.45 carrots, or about 54½, would fill a bushel, they would give 3,200 bushels to the acre, not less than 60 tons. But we are quite sure, that there is very little land on which carrots would grow so thickly and yet attain a good size; nor does Mr. F. commend this mode of cultivation. He only tried it once to see what could be done; and has this year planted his carrots in rows 18 inches apart, and is cultivating them by horse power, instead of hand, as last, believing that this way he will grow as profitable, if not as large a crop. He esteems carrots the very best of feed for milk cows; the best to fatten horses not at work; and better for working horses, given in part with oats, than oats alone.—Ed.

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## The Flower Garden.

The warm weather has now fully come, every day adding to the trophies won from the soil of a most reluctant spring. Already, to those who have fulfilled the conditions, the flower garden begins to give back the small percentage of time and labor it has cost, with a principal rich in the glory of its many-colored gifts.

How kindred to our hearts seem the plants, upon whose culture we have bestowed careful and personal attention. We have planted the tiny seed, and, waiting in patience for its growth, done the little in our power to hasten the result, around which, next to the upgrowth and development of animal life, hangs the most inscrutable of mysteries. We have helped up, out of the cold, dark earth, the tender leaf, and unfolding bud, till rejoicing in the warm sunshine and airs of heaven, these flower children have stood around us, clothed in a beauty, and breathing a fragrance that led the thought, and lifted the worship to Him who is the Father of the blue-bell and violet, the lily and the rose, no less than of the soul that fills with adoring wonder, and delight, in the presence of those beauteous emblems of his goodness and power.

Even so, O parent, entrusted with the care of plants whose blooming is for eternity! see to it that no dew-drop of kindness, no smile of affection, no husbanding of natural goodness and health-giving resources, no pruning off of useless, or ruinous habits be wanting in your great life-work of unfolding, and perfecting those immortal flowers, the beauty and purity of whose being ought to be the incense, whereon your own daily life might ascend to the fountain of light and love.—*Wisconsin Farmer.*

"Oh! if there is one *law* above the rest
Written in wisdom; if there is a *word*
That I would write, as with a pen of fire,
On the unsullied temper of a child,
'*Tis human love.*"

# MECHANICS' GUIDE.

## Recent American Inventions.

### Salomon's Carbonic Acid Gas Engines—A Great Triumph.

In our fifth volume, page 211, (Oct., 1852,) we published a very interesting communication from our much-esteemed friend, Dr. Newman, now deceased, in reference to Prof. Salomon, and several very interesting experiments with his invention, the "carbon engine." It will pay well for re-perusal, especially in connection with the statement recently made, that the learned professor has at length completely succeeded in making a practical working engine of which carbon is the moving power, which for economy, simplicity, power, etc., is far in advance of the steam engine, and will work out a thorough change in this department of practical mechanics. These hopes and expectations may be more or less disappointed, but the present position of the matter is certainly such as to give very great delight to the persevering professor, and if capital for such operations is not freely and abundantly offered, if required by Professor Salomon, it will be a disgrace to the country. But perhaps we are too fast (or too slow) in this, for it may be that this hour of his need is already past, and he may make a similar reply to such offers, as was made by Dr. Johnson to the English nobleman, who offered to be his "patron" after his reputation had become so great and wide, that such kind offices were needed no longer. The Doctor's reply was the concentration of sarcasm. On this point we are informed that "for this fortunate result, Prof. S. acknowledges himself under obligations to some of our most intelligent and opulent citizens, who, becoming persuaded of the feasibility of his design, did not hesitate to aid him with their means and encourage him with their confidence, without which, notwithstanding his own close and sanguine application and unyielding energy, he may have failed to bring his labors to a prosperous termination, at least for some time to come."

We take the following account from *The Baltimore Republican*, and will, with unusual delight, set before our readers any further developments that may reach us, on this immensely important subject:

"Prof. Salomon calls his discovery the 'Sulph. Oil Carbonic Acid Engine.' It is now located in Cyprus alley, between Pratt and Lombard streets, where its operations have been witnessed by numbers of scientific and practical machinists, all of whom agree in pronouncing it a complete triumph of science and mechanical skill, and regard its destiny as the doubtless early supersedure of steam for the motor of vessels, railroad cars, manufactories, etc. The machine we saw was merely an experimental one, and, of course, is still susceptible of improvement. The engine differs in no material feature from an ordinary rectilinial or reciprocating steam engine, and is calculated for four-horse power.

"The motor is produced by a compound of de-sulphiated bi-sulphuret of carbon, coal-tar, and volatile, or fixed oil, which under certain influences of heat becomes powerfully expansive, and hence is derived the momentum. The fluid or gas, on being heated, passes into the cylinder, acts on the piston, and is then conveyed through pipes into the condenser. Thence it is again returned to the heater, and again sent on its errand of imparting motion to the engine, to again be returned by the way of the condenser, thoroughly renovated and ready for further labor; and so on it continues until wasted away by such leakage, etc., as may not be prevented.

The heater into which the fluid or gas is introduced is submerged in a cistern of oil kept hot by a gentle fire, and in this the gas expands, gains its power, and passing to the cylinder, acts on the engine to be carried off and condensed as we have described, thus keeping up a constant active force, without the most remote danger of accident or explosion. The apparatus and all its appliances are without complication, easy to be understood, and at the same time not at all liable to disarrangement.

The cost of the fluid is about ten cents per gallon, and with careful attention, about eighteen gallons, it is said, will serve an engine of the capacity of the one now in use for at least an entire year. The engine alluded to has a piston of twelve inch stroke and six inch crank. It was worked up to ten horse power under the brake of a wheel three feet three inches in diameter, with a rim of two and a half inches, which was pressed between two bars, each having attached a friction block of seven and a half inches in length and two and a fourth inches wide, and under a weight of one hundred and twelve pounds. In this condition, the wheel easily made eighty revolutions per minute. The heat required was only 236° Fahrenheit, which produced 60 lbs. working power, under exhaustion, and an atmospheric pressure of 15 lbs. adverse, which should be added to the active agent. Steam, in the same proportions and under similar circumstances, with 267° Fahrenheit, only yielded 25 lbs. to the square inch, and, when tested, the engine moved but slightly.

An elaborate report of a series of experiments made with this apparatus, has been prepared for publication by Wm. H. Shock, Esq., United States Naval Engineer, which we would gladly give in our columns, did space permit. His experiments were made for the following purposes, viz.: First—To determine the pressure in the boiler at different temperatures of the oil-bath. Second—To ascertain the capacity of the boiler to supply the steam engine, and to test the capacity of the condensing apparatus. Third—To ascertain the declining ratio of temperature and pressures—the pressure recorded being due exclusively to the heat in the oil-bath, as the fire was permitted to burn out at the commencement of the trial. The thermometer used was Fahrenheit's; the engine, an ordinary condensing one, with four inches diameter of cylinder, and twelve inches stroke. The fuel was coke and pine wood mixed. Mr. S.'s experiments were all eminently successful. They commenced on the 23d of May last, and continued till June 6th, and were so thorough as to leave no doubt of the capacity of this invention to perform all which is claimed for it. The engine was at work on Friday in the presence of a large number of persons, some of whom were well versed in machinery, and all agree in confirming the opinion set forth above, that this is truly the invention of the age.

## American Cutlery.

We took occasion, some months since, to censure with some severity a circular of New-York hardware dealers, who took ground against our own manufactures, and forbade, on penalty of their displeasure, the use of a stamp of the name and residence of the maker, on such wares. It is not a little singular that at the same time the English were actually using, fraudulently, and to a considerable extent, these same American stamps. In Germany the same thing is done, to a still greater extent. It is also said that American mechanics use more of English steel of the first quality, in our cutlery shops, than is used in England. Of that known and marked as Hoop L, we use ten times as much as is used in England, though they manufacture fifty times as much cutlery as we do. A writer whom we all know as of high authority, Mr. Fleischman, says: "The manufacturers of cutlery in the United States have far surpassed those of the old world in the manufacture of tools, and that, not merely in the excellence of the metal used, but especially in the practical utility of their patterns, and in the remarkable degree of finish of their work." With such evidence of success, the American artizan can not fail to make strenuous efforts to reach the highest possible degree of skill in his profession, and he will thus acquire great honor both for himself and the country. Further evidence in this subject is found in the following paragraph, which we find in an exchange:

American Manufactures Abroad.—An Illinois plough-maker, Mr. Deere, has recently received an order from Naylor & Co., steel manufacturers of England, for three ploughs, of different kinds, for their own use in England. Mr. Deere made an order from the same firm, eight years ago, for German silver and cast steel, and has since made so many orders that the manufacturers felt a natural curiosity to know the purpose to which their customer applied it. It is something to talk about, that English material is sent to this country and to the "Far West," to be manufactured into agricultural implements to return again in its changed form to plough up English soil.

## Architecture of the Capitol Extension.

This great work proceeds slowly, but well. The new dome will be a splendid tribute to and evidence of American skill. It is divided into four sections—the first occupied by thirty-six columns of cast iron, twenty-seven feet high, and about three feet in diameter at the top. The foundation of the dome is the circular wall of the rotunda, carried up 24 feet above its interior cornice, and surrounded above the roof of the main building by an octagonal entablature and balcony. From the cast iron brackets embedded in this circular wall are to rise a double row of hollow cast iron columns to the height of 27 feet. These columns rest on a foundation consisting of cast iron plate, which again rests on a circular wall, belted, girded, cramped, and compacted into a mass of solid matter, forming, as it were, but a single body. On these columns, (which are hollow and fluted, and about an inch thick,) when in position will be placed a ring to form the foundation for a superimposed section of pilasters, less in size then the columns, but agreeing with them in number, on which will be strong panel work, constituting a third section or attic. The fourth section is the dome or cupola proper, and differs from other domes in having an elliptical instead of a circular section. Above the cornice of the rotunda, on the interior of the foundation wall of the dome, will appear a continuous belt of sculpture, 300 feet in length, representing the history of America.

The whole structure (the dome) will be of cast iron and glass, 124 feet in diameter at the base of the columns, and rising above the main building more than 200 feet. It is surrounded by stout circular plates of iron, bearing an altar-like structure girt with fasces, all of iron, supporting a globe, around which will pass a belt inscribed with the motto, "E Pluribus Unum." The apex consists of a lantern 52 feet high, 17 feet in diemeter, surmounted by a female figure of the goddess of liberty, 16½ feet high, of bronze, erect, with sword and shield, and a fillet studded with stars round her forehead, the work of Mr. Crawford.

The dome is to be ascended by spiral stairs between its outer and inner shell, or its roof and ceiling. There will occur frequent landings or balconies, affording both external and internal views.

## Transatlantic Cable.

The process of this enterprise is uninterrupted. At the last accounts several hundred miles of it were already on board the ship Niagara, and her whole quota of this unique cargo would soon be complete. The cable is placed in five coils of a conical shape, on the floor of the hold, and also of all the decks, (orlop, berth, and spar,) both before and aft midships. These coils are about twenty-five feet in diameter at base, and from three to four and a half feet high; and weighing from about 90 tons to 173. The coils lie over and under and around the hatches. They are wound upon a cone of hollow plank. It will be placed on board the Agamemnon in a single coil. The cable weighs about a ton to a mile, and is 2500 miles in length. Instead of one copper wire, it consists of seven, "each about as thick as a pin." Eighteen strands of iron wire, around these, form a protection or covering, which is within the insulating or gutta percha wrapper, which forms the outer part of the cable.

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## Breckenridge Coal Oil Company.

Our readers will recollect what we have so lately written in reference to the value of coal oil and coal gas, and also of Paraffine for candles. In looking over the annual report of the company, the name of which forms our caption, we notice several statements which are of great importance in reference to these immense sources of profit and of convenience. It appears that "the Boghead coal of Scotland, the Albert coal of the Province of New-Brunswick, and the Breckenridge coal," are "the only coals yet discovered peculiarly adapted for the production of oils." On page 558 of our March No., we stated that the Boghead cannel was the richest coal known for the production of gas, and that Scotch Parrot coal was the next. We see that the Breckenridge Company claims "preëminence" for their coal in the production of oil, though the grounds of the claim are not given. It is no doubt very valuable, and probably the richest, for this purpose, in this country.

In our April number, page 619, we presented some of the statistics of this company, and gave our readers to understand, as we supposed, that we looked for very valuable results from it. We present below a few short extracts from their report, in confirmation of our opinions there set forth.

"Hitherto, sperm oil has been unapproachable in its adaptability to lubricating and burning purposes—now it is equalled by coal oil, and it is only reasonable to expect that, with the further developments in their manufacture, coal oil will leave this article far behind. In the higher branches, such as the finer portions of intricate machinery, and in cotton spinning, coal oil has already the decided preference, and before long, linseed oil, which is yet considered essential as a paint oil, will have to yield its place to this new rival. The lighter portions of this production are not to be overlooked. Benzole and Naphtha are now becoming known, and they only require to be properly known to be appreciated as the perfection of light, and of solvents. Paraffine, too, deserves your attention. Possessed of properties which place it on an equality with the very finest spermaceti in the manufacture of candles, it contains others, which render it valuable to the artists in the production of various works of rare beauty and elegance. . . .

"The question has frequently been asked, if our supply of coal warrants the erection of extensive works for its manufacture into oil—if we should not soon run out of coal, were we to consume, say a hundred or more tons per day in these works? It will be gratifying to you to know that, although this quantity were consumed daily, according to the statement given under oath by Professor Silliman and his associates, commissioners appointed by the Governor of the State of Kentucky, to estimate the extent of the coal lands belonging to the Company, we have a supply that will last over 570 years, so that instead of running out of coal, we may increase the manufacture of oils to any conceivable extent, and have a supply for many generations."

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## The Victoria Bridge, Montreal.

The new bridge that is to cross the St. Lawrence, near Montreal, will be one of the architectural wonders of the day. It is to cross the river from Point St Charles to the South Shore, the distance being a little less than two miles. It is to be on the tubular principle; there will be a track for railroad cars in the center, and on the outside of the tube will be, on each side, a balcony, with a foot-path for passengers. The bridge will rest on twenty-four piers and two abutments of limestone masonry, the center span being 330 feet long, and 60 feet high from summer water-level, descending at either end at the rate one in 130. It is to be built, in every respect, in the most substantial manner, and when finished will cost $6,250,000.

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## Clough's Traps for Insects.

A very learned friend once said to us that the invention of friction matches was one of the most useful inventions of the age. He who will defend us from the inroads of barbarian insects deserves to be placed in the same niche in the temple of fame. Mr. Clough, 489 Broadway, thinks he is this happy man. His fly and mosquito trap and coakroach trap are certainly full of promise. For after standing, when properly charged, they are often found *full of flies.* Those who have tried them speak highly of them. We have seen evidence of their efficiency. Price 25, and 40, and 50 cents each.

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## Demorest's Miniature Gas Stoves & Dress Patterns.

Our readers have not forgotten what we published in regard to Demorest's pattern of these useful articles. They might be called "Diamond Gas Stoves," with far less impropriety than in the case of California Quartz, for this term is technically applied by printers to a very fine type, and it may also indicate a great value in a small compass. Mr. D. has sold immense numbers of them. The same establishment, 375 Broadway, also supplies Premium Dress Patterns for twenty-five cents, which will save a housekeeper perhaps as many dollars. By these patterns any dress may be cut at home, and made up in the family. Full sets of trimmed patterns, of any style, "including cloak, mantilla, sack, basque," etc., etc., etc., costs but three dollars. This enables any one to do all her work at home, as long as the fashion lasts. It is a "capital institution."

## To make Hard Candles of Soft Tallow.

To TWELVE pounds of tallow take half a gallon of water, to which add three tablespoonfuls of pulverized alum, and two ditto saltpetre, which heat and dissolve; then add your tallow and one pound of beeswax; boil hard altogether, until the water evaporates, and skim while boiling. It should not be put in your molds hotter than you can bear your hand in. The candles look much nicer when the wicks are not tied at the bottom. It is not only a disagreeable task to cut the wicks off, but it injures the mold. Never heat your molds to draw your candles in cold water.

Tallow from beeves fed on corn or grain, is much softer than when fed on grass or clover. Therefore the tallow from grass-fed cattle should always be selected for summer use, and the candles will always be hard with the addition of very little alum and beeswax. In very cold weather much less alum must be used, or they will crack so as to fall to pieces sometimes; and a third more of each should be used in warm weather if the tallow is very soft. With a little management you can always have hard tallow for summer use where you make all your own candles.—*Country Gentleman.*

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## To Render Textile Fabrics Waterproof.

TAKE 1 pound of wheat bran, and 1 ounce of glue, and boil them in 3 gallons of water in a tin vessel for half an hour. Now lift the vessel from the fire, and set it aside for ten minutes; during this period the bran will fall to the bottom, leaving a clear liquor above, which is to be poured off, and the bran thrown away; one pound of bar soap cut into small pieces is now to be dissolved in it. The liquor may be put on the fire in the tin pan, and stirred until all the soap is dissolved. In another vessel one pound of alum is dissolved in half a gallon of water; this is added to the soap-bran liquor while it is boiling, and all is well-stirred; this forms the waterproofing liquor. It is used while cool. The textile fabric to be rendered waterproof is immersed in it, and pressed between the hands until it is perfectly saturated. It is now wrung, to squeeze out as much of the free liquor as possible, then shaken or stretched, and hung up to dry in a warm room, or in a dry atmosphere out-doors. When dry, the fabric or cloth so treated will repel rain and moisture, but allow the air or perspiration to pass through it.

The alum, gluten, gelatine, and soap unite together, and form an insoluble compound, which coats every fibre of the textile fabric, and when dry repels water like the natural oil in the feathers of a duck. There are various substances which are soluble in water singly, but when combined form insoluble compounds, and *vice versa.* Alum, soap, and gelatine, are soluble in water singly, but form insoluble compounds when united chemically. Oil is insoluble in water singly, but combined with caustic soda or potash it forms soluble soap. Such are some of the useful curiosities of chemistry.—*Scientific American.*

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FOR THE AMERICAN FARMERS' MAGAZINE.

## The Mechanical Problem in April Number.

CLINTON, Mass., June 24th, 1857.

MESSRS. PLOUGH, LOOM, AND ANVIL:—Your correspondent, G. W., takes exception to my solution of the "Mechanical Problem" by saying that the point at issue is taken for granted. All that can be said to be taken for granted is, that the inference which I drew from my demonstration, was a legitimate result of that demonstration, and thus, in my opinion, a proof of the point at issue; which result is, in brief, that the only power actually applied to propel the boat, consists of the physical force of the man in the boat, who is pulling upon the rope, with his feet braced against the side or bottom of the boat, and the other end of the rope made stationary on the shore, by being attached either to a post or man, either of which must be supposed to pull upon the rope precisely as hard as they are pulled upon, and no harder; for if the force of the man in the boat is more than counterbalanced by the man on shore, our nautical hero is pulled overboard, and the experiment ends. The case is the same with the two boats supposed by G. W., with a man in each, and their ropes attached to a post in the center of the pond. We will suppose the man in the boat *A*—for convenience—draws against the post with a power equal to fifteen pounds; the post withstands this power by an equal reäcting force. The man in the boat *B* also pulls against the post with a power of fifteen pounds, which is also reäcted by the post; and the power of these two men being applied in opposite directions, the action of each neutralizes that of the other in their effect upon the post, so that the result is necessarily the same, whether the lines are attached to the post in the center, or "detached from the post, and fastened to each other."

Having eliminated the post as an unnecessary quantity, we will proceed with the solution. The men are now pulling against each other, and obviously, *must* pull with equal force, or the weaker must yield and get a ducking. The man in the boat *A* applies the supposed power, which produces a given velocity to his own boat, and, on the principle of the equality of action and reäction, it is immaterial whether the other end of his rope be attached to a man or post in the other boat. And now the conclusion is, that all the difference between the man in the boat *A* pulling against boat *B*, and pulling against a post on shore is, that in the former case, boat *B* yields to the power applied, with a velocity equal to that of boat *A*, and makes it necessary to haul in slack rope to double the amount of his own motion, while in the latter case, the post on shore maintains its position, and the slack rope exactly measures the motion of the boat. Will G. W. please "devise a way" for arriving at a different conclusion?

Yours, P. W. F. C.

## Recent Patents,

[ISSUED FROM THE U. S. PATENT OFFICE, FROM JUNE 2 TO JUNE 30, 1857.]

### Agricultural.

Self-loading cart, J. S. Brow, Washington, D. C. Combination of revolving elevator and scraper.—Grain Separator, Elihu Doud, Oshkosh, Wis.—Self-acting Wagon Brake, M. C. Chamberlain, Johnsonsburgh, N. Y.—Portable Fence, Wm. Morrison, Carlisle, Pa.—Stump Extractor, Peter Traxier, Scottsburg, N. Y.—Cheese Hoop, C. P. S. Wardwell, Lake Village, N. H.—Mould board for reversible Plows, Henry S. Akens, Berkshire, N. Y.; composed of rods or bars, susceptible of torsion, or of being twisted to the right or left, &c.—Harvester, Nicholas Clute, Dunnsville, N. Y.—Butter Workers, Chas. W. Gage, Homer, N. Y.—Corn Planter, Ives W. McGiffey, Buffalo, N. Y.—Seed Planter, Solomon T. Holly, Rockford, Ill.—Cutting apparatus of Harvesters, M. G. Hubbard, Penn Yan, N. Y.—Plow, C. B. Ingersoll, Morris, Ill.—Plow, E. D. & L. W. Legg, Speedville, N. Y. Combination of adjustible cutter and reversible mould board. —Sowing grain in drills, Frederick Moehlmann, Belleville, Ill.—Corn Planter, Wm. T. Pepyer, Rising Sun, Ind.—Same, Sylvanus Richardson, Jericho, Vt.—Gang Plows, Joseph Sutler, St. Louis, Mo.—Cultivator Plows, Micajah Tolle, Newport, Ky.—Excavating Machines, Alonzo Taggart, Warrentown, Mo.—Mowing Machine, J. B. Wardwell, Methuen, Mass.—Cleaning rice, John F. Taylor, Charleston, S. C. The kernels are rubbed together in a screw cylinder.—Earth Excavator, Curtius Colby, Wilson, N. Y.—Raking attachment for Harvesters, John McIntosh, Geneva, Ill.—Harvester, D. S. McNamara, N. Hoosick, N. Y.—Fences, James Moore, Pittsburg, Pa.—Lozenge formed slats, and the alternate twisting of the wires between the slats.—Frame for combined mower and reaper, J. A. Moore, and A. H. Patch, Louisville, Ky.—Chilling Plowshares, James Oliver and Harvey Little, South Bend, Ind.—Farm Gates, Wm. Sherwood, Beloit, Wis.—Raking Apparatus, for Harvesters, Daniel C. Smith, Tecumseh, Mich.—Harvester, C.T. Stetson, Amherst, Mass. Mode of raising and lowering the sickle of harvesters.—Harvester, Henry D. Hammond, Batavia, N. Y.—Harvesting Machine, John K. Harris, Allensville, Ind.—Self-acting rakes for Harvesters, S. T. Lamb, New-Washington, Ind.—Automatic rake for Harvesters, Joseph H. Manning, Philadelphia.

### Metallurgy.

Holding the bit in the brace, Geo. Benjamin, Avoca, N. Y.—Grooving Stove Pipe, Charles Bigelow, Hastings, Min. Ter.—Making horse-shoe nails, Calvin Carpenter, Jr., Providence, R. I.—Making wrought nails, Smith Gardiner, New-York.—Nail Machine, E. W. Scott, Lowell, Mass., and A. M. George, Nashua, N. H.—Wrench, Edward J. Worcester, Worcester, Mass.—Nut Machine, Samuel H. Whittaker, Cincinnati, O.—Tongueing and grooving Hand Plane, Porter A. Gladwin, assignor to himself and Thos. F. Caldicott, Boston.—Forging Horse-shoe nails, Robert Cook, assignor to himself and Samuel Norton, South Abington, Ms.—Screw Cutter, James M. Evarts, Westville, Ct.—Bending Sheet Metal Pans, E. A. Smead, Tioga, Pa.—Wiring Tin-pans, by same.—Screw wrench, G. C. Taft, assignor to A. W. Mason, Worcester, Ms.—Keeper for Locks and Latches, Andrew Patterson, Birmingham Pa., assignor to J. H. Jones, Pittsburgh, Pa.—Saw set, Jacob Erdle, West Bloomfield, N. Y.—Manufacture of Iron, Wm. Kelly, Lyon Co., Ky.—Straightening Knife-blades, H. Pierce, Claremont, N. H.—Enameling Iron pipes and Hollow Ware, Edward Pierce, Philadelphia.—Hardening Axes, &c., J. N. Rockwell, Napanock, N. Y.—Candlesticks, Timothy Rose, Courtlandville, N. Y.—Taps and Dies for cutting screws, Ira A. Richard, assignor to Silas Stevens, East Brookfield, Mass.—Boring Mill, Wm. Sellers, Philadelphia.—Making bolts and rivets, Joel R. Bassett, Cincinnati, O.—Machine for riveting boilers, Sylvester Bennett, New-Orleans.—Iron Pavements, for streets, Geo. W. Bishop, Brooklyn, N. Y.—Making Horse Shoes, Henry Burden, Troy, N. Y.—Horse Shoe, Wm Cooper, Brooklyn, N. Y.—Journal box for shafting, Daniel Taylor, Carbondale, Pa., a brass lining embodying the latter being cast upon the former.—Die Stock, James Teachout, Waterford, N. Y.—Permutation Lock, Frank G. Johnson, Brooklyn, N. Y.—Iron truss frames for bridges, Francis C. Lowthup, Trenton, N. Y.—Lock, Ludwig Baier, assignor to Joseph Lippencott and Wm. C. Barr, Pittsburg, Pa.—Strap Pillow block for Shafting, Geo. H. Reynolds, Medford, Mass., assignor to himself and D. B. Hinckley, Bangor, Me.—Hob for cutting screw cutters, G. C. Schneider, Washington, D. C.—Making cast iron malleable, A. K. Eaton, New-York.—Screw Cutters, J. M. Evarts, Westville, Conn.

### Fibrous and Textile Fabrics.

Making paper, Edward B. Bingham, Brooklyn, N. Y.—Coloring yarn on the bobbin, James Thompson, and W. P. Wakelee, New-Hartford, N. Y. The use of a vacuum, to facilitate the absorption of coloring matter.—Sewing Machine, Elias Howes, Jr., Cambridge, Ms., and Wm. R. Bliss, Boston.—Same, William Sage, Durham Center, Conn., assignor to Henry Sage, Berlin, Conn.—Preparing India Rubber cloth, Charles Winslow, Lynn, Ms.—Roller Temple for looms, Warren W. Dutcher, Milford, Mass.—Sewing Machine, Daniel Harris, Boston, Mass.—Ladies' Skirts, E. F. Woodward, Brooklyn, N. Y., a spiral stiffener, &c.—

Knitted Fabrics, Joseph Vickerstiff, assignor to Martin Landenberger, Philadelphia, a new article, a fabric, knitted with threads of different colors, and composed of two separate thicknesses, interlocked at intervals, as required, by transposing the threads, so that both sides shall present a plain uninterrupted surface of loops.—Blotter, R. G. Allerton, New York, a convex surface with a handle, to be used by a single rocking motion.—Manufacturing felt cloths, Thos. B. Butler, Norwalk, Ct.—Carpet Fastenings, David N. B. Coffin, Jr., Newton, Mass. A screw with a head on one side of its axis, so that a turn half round will release the carpet.—Drying pasteboard, Patrick Clark, Rahway, N. J. Heated hollow tables, one above another.—Rope Machine, Wm. R. Dutcher, Lansingburgh, N. Y.—Camp Tents, Benjamin Hinckley, Troy, N. Y. The rafted frame is hinged, in sections, so that the frame can be folded for convenient carrying.—Sewing Machine, Daniel Parris, Boston.—Machine for folding paper, James F. Weeks, Columbus, O.—Carpet Bags, Joseph Zepfel, assignor to himself and John B. Radley, New-York.

### Chemical Processes.

Covering insulated wire with lead or other ductile metal, Samuel C. Bishop, New-York.—Making Lampblack, J. A. Roth, Philadelphia.—Brine Evaporator, Charles W. Atkeson, Henderson, Ky.—Condensing apparatus for salt and gasses, J. C. F. Solomon, Baltimore, Md.—Refrigerator, J. C. Schooley, Cincinnati, O.—Preparing liquid Rose Pink, John W. Perry, assignor to James W. Gates, Boston.—Separating oil from steam, Robert Hill, Roxbury, Mass.—Electric Telegraph, Harrison G. Dyer, New-York.—Starch from Maize, Wm. Watt, Belfast, Ireland. The corn is first steeped, whole or broken, in water, at a temperature of 70° to 140° F., the water being changed several times, or applied in continuous streams, it is then ground or "levigated" with water at 70° to 140°. The starch is then separated by process as described.—Smelting Furnace, Charles C. Alger, Newburgh, N. Y.—Condensing liquid in gas main pipes, John Walton, Louisville, Ky.—Defecating cane juice, Leonard Wray, London, Eng.

### Calorifics.

Steam Heating Stove, Asa Blood, Norfolk, Va.—Bakers' Oven, John Chilcott, Baltimore, Md.—Solar Lamp, Joseph Hassell, Brooklyn, N. Y.—Coal Stove, John B. Kohler, Philadelphia.—Gas Generator, Augustus A. Hayes, Boston, Mass.—Gas Burner, John C. Walsh, Lockport, N. Y.—Foot Stove, J. W. Lefferts, Brooklyn, N. Y. Heated by a lamp.—Fire grates, or lining of fire pots, Daniel H. Dean, Lowell, Mass., assignor to Wm. J. Coggshall, Fall River, Mass.—Gas Stove, Patrick Mihan, assignor to himself and Robert F. Fitts, Boston.—Gas Generator, Napoleon Aubin, Albany, N. Y.—Vapor Burner, Horatio Fairbank, South Brookfield, Mass.—Fountain Lamp, Henry W. Adams, New-York.—Steam Radicator, for heating apartments, J. H. Chester, Cincinnati, O.—Gas Regulator, John H. Cooper, Philadelphia.—Street Lantern, John Reese, and C. N. Tyler, Washington, D. C.—Gas Generator, J. W. Smith, Washington, D. C. Gas burner, Asa D. Gates, Binghamton, N. Y.

### Steam and Gas Engines.

Guiding and cushioning paper valves, Joseph Hyde and Wm. Stearns, Wilmington, Del.—Damper regulators for steam boilers, Patrick White, Brooklyn, N. Y.—Steam pressure gage, Joseph L. Eastman, Boston, Mass.—Valve connections for Steam Engines, B. L. Phillips, Providence, R. I.—Valve Gear for steam engines, Samuel Swartz, Buffalo, N. Y.—Gas generator, E. W. Whitehead and J. L. Conklin, Newark, N. J.—Steam pressure gage, J. H. Miller, and John Kailey, assignors to themselves and John Danner, Canton, O.—Vane governor for steam engines, &c., Francis Gustine, Medford, Mass.—Safety steam boiler, W. G. Pike and Isaac R. Scott, Waltham, Mass.—Steam boiler, Harry Whitaker, Buffalo, N. Y.—Steam Whistle, Sylvester W. Warren, assignor to himself and Dexter N. Force, Brooklyn, N. Y.—Cylindrical Throttle Valve, James H. Simmons, Erwin, N. Y.—Valve Gear for Steam Engines, Sidney Maltby, Dayton, O. The link and hook motion, in the reverse cut off and lead of the valve are dispensed with, and a direct attachment to the wrist of the engine crank is substituted.—Metallic Packing for Steam Pistons, Daniel Lasher, Brooklyn. N. Y.—Valves in Steam Cylinders, M. G. Stacy, assignor to John W. Way, Flemington, Ga.—Slide Valve for Steam Engines, Thomas Winans, Baltimore, Md.

### Navigation and Maritime Implements.

Steering apparatus for ships, Phineas Smith, Patchogue, N. Y.—Rudder, R. S. Harris, Galena, Ill. An outer or second rudder, attached to and working in the first rudder, with a short tiller, held and worked by stationary chains and ropes. Propellor canal boats, G. W. Swartz, Buffalo, N. Y.—Propelling vessels in shoal water, J. W. Wetmore, Eria, Pa.—Reducing Topsails, Thomas Batty, Brooklyn, N. Y.—Ships' Windlass, J. Peevy and Abraham Sanborn, Bangor Me.—Ships' Capstances, Robert Dunbar, and John F. Robertson, assignors to the Buffalo Eagle Iron works, Buffalo, N. Y. A new mode of imparting a variable motion to the capstan.

### Civil Engineering and Architecture.

Catch for doors, Jeremiah M. Crosby, Norwalk, O.—Roofing Machine, J. B. Driscole, Knoxville, Tenn.—Hanging Doors, Albert W. Morse, Eaton, N. Y.—Laths for buildings, John L. Brabyn, New York.—Constructing Stores, W. L. Johnson, Peytonsville, Tenn.—Excavating Tunnels, Charles Wilson, Springfield, Mass.

### Land Conveyance.

Repairing R. R. Bars, Lyman Beebe, and Geo. F. Smith, Michigan City, Ind. Railroad switch dock, Wm. L. Cawthro, Harper's Ferry, Va.—Carriage Brake, Geo. Hanck, Mechanicsburg, Pa.—Carriage Wheel, J. D. Sarven, Columbia, Tenn.—Setting tires on wheels, John H. Williams, Pleasant Hill, O.—Railroad Snow Excavator, S. G. Ludlum, Oyster Bay, N. Y.—Ventillating Vault, and platform light, John C. Wolvin, assignor to Geo. Peckham and himself, New York.—Central draft joint of carriages, Luther O. Rice, Caistorville, C. W.—Whiffletree hook, Anthony Cooley, Paw Paw, Mich.—Brake for Wagons, Hugh Slater, Auburn, N. Y.—Carriage Top, R. S. Jennings, Waterbury, Ct.

### Hydraulics and Pneumatics.

Basin Faucet, Wm. C. Marshall and Horace W. Smith, Hartford, Ct.—Rotary Pump, Robert Ramsden, South Easton, Pa.—Method of increasing Hydrants, William Bramwell, New-York, assignor to Samuel P. Ayers, New-Rochelle, N. Y.—Valvular arrangement for Basin, and cocks, Edward G. Bunham, assignor to himself and Henry A. Chapin, Springfield, Mass.—Hydrant, Joel Bryant, Brooklyn, N. Y.—Elevating Water, by compressed air, Archibald Thompson, Detroit, Mich.—Faucet, D. N. B. Coffin, Newton Center, Mass.—Valvular arrangement for Faucets, &c., Edward Hamilton, Chicago, Ill.—Pump, W. H. Harrison, Philadelphia.—Hydrant, G. P. Ferrine and J. E. Boyle, Richmond, Va.—Attaching air chambers to Pumps, Charles N. Lewis, assignor to Geo. C. King, Seneca Falls, N. Y.—Water Meter, Peter H. Niles, assignor to himself and Alfred Douglass, Jr., Boston.—Blast Blower, John Brough, Aurora, Ill.

### Grinding Mills, and Mill Gearing.

Automatic Fans, Lawrence Rebstock and N. Reimel, Philadelphia.—Grinding Mill, Ezra Coleman, Philadelphia.—Distributing apparatus of Flouring Mills, Alfred T. Clark, Lancaster, Pa.

### Lumber, and Tools and Machines for Preparing it.

Miter Box, Geo. L. Chapin, Perrysburgh, N. Y. The saw may be so guided as to cut at any desired angle.—Preparing hubblocks for the Lathe, Lovett Eames, Kalamazoo, Mich.—Wheelrights' Machine, E. N. Kilpatrick, Byhalia, Miss.—Machine for felling trees, Elliot F. Miller, Chelsea, Mass.—Shield and Guide for circular saws, G. W. Rodeboy, Milwaukie, Wis.—Adjusting circular saws, obliquely to their shafts, G. R. Scriven, Philadelphia.—Automatic Saw Mill Blocks, Hiram Wells, Florence, Mass.—Stock for Bench Planes, Joel Bryant, Brooklyn, N. Y.—Cork Machine, Edward Conroy, South Boston —Making Axe Poles, Richard H. Cole, St. Louis, Mo.—Portable Steam Sawing Machine, S. R Wilmot, Watertown, Conn.—Holding and adjusting plane irons in their stocks, W. W. Shipman, Lowell, Mass.—Basket handles, Anthony Faas, Philadelphia.—Picker sawing machine, John Haw, Old Church, Va.—Sawing Mill, J. G. Kennedy, Cincinnati, O.—Boring Machine, L. B. Lloyd, Warwich Township, Pa.—Finishing brush handles, Thomas Mitchell, Lansingburgh, N. Y.—Securing and adjusting plane irons in their stocks, Wm. Stoddard, Lowell, Mass.—Bench Plane, Thomas D. Worrall, Lowell, Mass., assignor to Thomas F. Caldicott, Charlestown, Mass.—Mortising Machine, H. B. Smith, Lowell, Mass.—Adjustible fender posts for Saw Mills, Henry Harpold, Racine, O.—Sawing machine for felling trees, Matthew Ludwig, Boston.—Cross cut sawing apparatus, Henry F. Wilson, assignor to himself and Henry B. West, Flemington, Ga.

### Leather, Tanning, etc.

Manufacture of boots, James Scrimgeour, Brooklyn, N. Y. So cutting out the leathers that they do not require to be crimped—Pegging boots and shoes, B. F. Sturtevant, assignor to himself and Elmir Townsend, Boston.—Deplating compound for hides, A. K. Eaton, New-York.—Splitting leather, Dexter H. Chamberlain, West Roxbury, Mass.—Scouring and Setting leather, Peter E. Hammel, Pulaski, N. Y.—Machine for skiving boot counters, Wm. Butterfield, Boston, and Bradford Stetson, Uxbridge, Mass., assignors to themselves and Elmer Townsend, Boston.—Polishing raw-hide whips, Eugene Blattner, Philadelphia.

### Household Furniture.

Paring, coring and quartering apples, Charles F. Bosworth, Petersham, Mass.—Mop-head, E. P. Thompson, Worcester, Mass.—Invalid Bed Elevator, D. Stringham, Dunham, New-York.—Chair for invalids, James G. Holmes, Charleston, S. C.—Bedstead, Peter Hinds, Kendalls' Mills, Me.—Spring bed bottom, Geo. W. Dow, assignor to himself and Walter F. French, Lynn, Mass.—Elastic Loop for bedstead slats, Charles Robinson, Cambridgeport, Mass.

### Arts, Polite, Fine, and Ornamental.

Rounding and backing books, Theodore Bergner, Philadelphia.—Card printing press, Charles E. Emery, Canandaigua, N. Y.—Melodeon, Wm. Evans, Lockport, Ill.—Constructing watch and locket rings, Henry A. Phillips, Providence, R. I.—Power printing press, Jedediah Morse, Canton, Mass, assignor to the S. P. Ruggles power press manufacturing Co., Boston, Mass.—Card printing press, Franklin & Bailey, Boston, Mass.—Motion for preserving rolling contact, &c., Geo. P. Gordon and Frederick O. Degener, New-York. Adapted to type and lithographic presses, &c.—Printing press, F. L. Bailey, Boston.—Caligraph, Charles Thurber, Worcester, Mass.—Background for photographs on glass, J. W. Wykes, Wheeling, Va.—Printing Ink, George Matthews, Montreal, C. E.

### Fire Arms, &c.

Breech loading fire arms, Gilbert Smith, Buttermilk Falls, N. Y.—Same, John Schenkl, Boston.—Fire arms, Jacob Shaw, Jr., Hinckley Township, O.—Cartridges, Gilbert Smith, Buttermilk Falls, N. Y.

### Surgical and Medical Instruments.

Uterine Supporters, W. E. Cooke, Philadelphia.

### Miscellaneous.

Metallic band fastening for bales, &c., Asa O. Broad, Louisville, Ky.—Clay Pulverizers, Ira Herzey and James H. Van Riper, New-York.—Brick press, R. R. Harbour, Oskaloosa, Iowa.—Paper file, D. A. Stiles, W. Meriden, Conn.—Safety attachment for hatchways, James Bridge, Augusta, Me.—Animal trap, Henry Hackman, Jr., Pequa, Pa.—Safety Pocket, Horace Harris, Newark, N.J.—Stamp label sticker, Coleman Sellers, Philadelphia.—Smut machine, James Tompkins, Liberty, Pa.—Umbrella and Parasol, James Willis, London, Eng —Machine for graduating linear measures, S. C. Hubbard, assignor to C. C. Hubbard, Middletown, Ct.—Lighting street gas, John Reede and Charles N. Tyler, Washington, D. C.—Preserving green corn, David Rowe, Baltimore.—Compound for covering Hams, Carter Van Veeck, Macomb, Ill.

## Recent Foreign Inventions.

### Puddling Pig Steel.

A Prussian correspondent of the *Mining Journal*, published in London, expresses surprise that some of the capitalists in England do not turn their attention to puddling pig steel, which in Prussia is making rapid strides. Puddling both iron and steel with gas, is very general in Prussia. In some instances the gas is obtained from the blast furnace, but in most cases it is generated to each furnace; dry wood, charcoal, lignite and turf, are employed as fuel. At one of the iron works where wood is used for gas, the charges are eight hundred weight of white mottled iron for each furnace, bringing out twenty to twenty-one tons of puddled bars per week, at a loss of only four or five per cent., and with a consumption of four cubic feet of timber per hundred weight of puddled bars. At another establishment they charge with ten hundred weight of gray pig, and bring out the charge in two and one-half hours with 8.70 cubic feet of wood per hundred weight of puddled bars. A large rolling-mill is arranged to puddle steel with gas from iron lignite, to be converted into railway wheels and tires, for which there is an increasing demand; these are forged under the hammer to nearly the required form, and then passed through a pair of rolls to finish them. A preparation of pig iron, of the following character, is found to possess some excellent qualities: A small quantity of common salt—say one and a half to two per cent.—is introduced into coke ovens, along with the small coals; the salt removes the sulphur from the coke, and hence the iron made with this coke in the blast furnace is materially improved. Bars made from this iron have broken like crown iron, and it makes capital rails. All such processes tend to bring the manufacture of this important metal to a continually higher degree of perfection.

### Manufacture of the Celebrated Russian Leather.

In the production of the well-known Russian leather, the hides to be tanned—whether wet or dry—are first laid to soak for three days and three nights in a solution of potash, to which some quicklime is added. The potash used is made of the common elm, which is said to be preferable to any other, if not essential; it is not purified, so that it is of a brown color, and of earthy appearance. About four hundred and thirty-two pounds of this and seventy-two pounds of lime, serve for one hundred skins. When the lie is weak, they let the skins lie longer in the solution. When the skins are taken out, they are carried to the river and left under water for a day and night. Next, two and a half gallons of dog's ordure is boiled in as much water as is enough to soak fifty skins; but in the winter time, when the ordure is frozen, twice that quantity is found necessary. The skins are put into this solution when it is about as hot as the hand can bear, and in this they remain one day and one night. The skins are then sewed up so as to leave no hole; in short, so as to be water-tight. About one third of what the skin will contain is then filled up with the leaves and small twigs chopped together of the plant called bearberry, which is brought from the environs of Solikamskaga, and the skin is then filled up with water. Thus filled, they are laid one on the other in a large trough, and heavy stones upon them, to press the infusion through the pores of the skin in about four hours—the filling up being repeated ten times successfully, with the same water. They are then taken to the river and washed, and are ready for the dyeing—the whitest skins being laid aside for the red and yellow leather. The skins are softened, after dyeing, by being harrassed with a knife, the point of which curves upwards.

## Discovery in Veneering.

A PROCESS of veneering by transfer is mentioned with approval in the French journals. The sheet of veneer or inlaying to be copied is to be exposed for a few minutes to the vapor of hydrochloric acid. The sheet of veneer is then laid upon one of calico or paper, and an impression struck off by means of a common printing-press; this impression remains invisible until, as with many of the sympathetic inks, it is exposed to the action of heat, which is to be applied immediately after the sheet is printed off, when a perfect impression of all the marks, figures, and convoluted lines of the veneer is instantaneously produced. This may be repeated for an almost indefinite number of times, wetting the veneer occasionally with the dilute acid, without the impression growing fainter. The designs thus produced all exhibit a general woodlike tint, most natural when oak, walnut, maple, and the light colored woods have been employed.

## Fire-Place Shutters.

IN many of the first class houses recently erected in England, fire-place shutters are provided, which, when partly drawn down, act as powerful blowers, and when wholly drawn down, so as to touch the hearthstone, entirely close up the fire-place, and instantly extinguish the combustion of the fuel in the grate, or that of the soot in the chimney, should it accidentally take fire.

IMPROVEMENTS IN REDUCING THE FRICTION OF AXLES AND AXLETREES OF CARRIAGES ON RAILWAYS. LEON JOSEPH POMME DE MIRIONDE, Paris.

This invention consists in mounting saddlewise, in axle-boxes, two friction rollers, which are shaped to correspond with the journal of the axle; and in a method of lubricating the axes of the rollers and the journal itself. Bearings are provided in the axle-boxes for the axes of the two saddle friction rollers, which rollers take the bearing of the journal of the axle.

To each side of the journal is affixed a ring, to which is connected a band or covering of some suitable flexible material: this material dips in an oil reservoir in the bottom of the axle-box, and being carried round with the axle, keeps up a continuous lubrication to the axes of the friction rollers, and to the journal of the axle.

IMPROVEMENTS IN APPARATUS TO FACILITATE THE PRINTING OF YARNS OR THREADS. RICHARD WHYTOCK, Edinburgh.

According to the method usually practiced for producing figural fabrics by the use of printed yarns, hanks are formed on cylinders, and remain on the same till printed. Now there are certain difficulties in this process which it is desirable to remove. The first is, that the length of pattern is limited by the size of the cylinder: thus, a cylinder six yards round only extends figures in velvet pile to forty inches. Hence, recourse has been had to cylinders nine yards and eleven yards in circumference; but this is still not enough, although beyond this they are scarcely manageable. Attempts have been made to get over this by using two cylinders, placed at a distance asunder; but no practical means have been devised for covering them with yarns.

Now, this invention consists in employing two cylinders, or, in preference, two open reels, and placing them opposite each other: these are held together by connecting bars of wood or other suitable material, so that they can be lifted about from place to place. These reels are covered with a continuous coating of yarn or threads, laid in as regular order as the threads or yarns on a cylinder are; and this is effected by the following process :---The reels or cylinders are each placed between two wheels of rather larger diameter than the reels. Endless bands connect those wheels, that is, one fore-wheel and one hind-wheel; so that the two endless bands run parallel to each other. Upon those parallel bands a light carriage is fixed, which conveys the bobbins containing the threads or yarns with which the reels or cylinders are to be covered. The bobbins are passed over the reels or cylinders, and then under the reels or cylinders, until so many coils or threads are placed in regular order, embracing both reels. It is a motion directly the reverse of that used in covering the cylinders; for while the cylinder revolves on its center, the hank with the bobbins is stationary. Here the reels remain passive, and the hank with the bobbins revolves round them. The change in the distance of the reels or cylinders from each other regulates the size or length of the coil. These coils may be removed from the reels, and printed on tables or under cylinders—for such patterns as are termed turn-over patterns; but it is proposed to print the coils before removal of the yarn by means of a printing machine, with traversing-pulleys, (formerly patented by the present patentee,) so that all kinds of patterns can be produced as by the cylinders, and with greater advantage.

Improvements in the Manufacture of Iron. Joseph Gilbert Martien, of Newark, N. J., U. S. A.

This invention consists in applying to and disseminating through and amongst fluid iron, or fluid metal possessing the characteristics of iron, of any kind, form, or description whatsoever, as it flows from or whilst in a transition state from a melting or re-melting furnace, cupola, fire, vessel or place of any kind or form whatsoever from which fluid iron may or can flow, (except from a smelting furnace,) atmospheric air, oxygen gas, chlorine gas, hydrogen gas, carburetted hydrogen gas, or any desirable vapor, gas, or gases, separately or combined, and in a natural state, or in a more or less heated state, as may be required, for the purpose of heating, oxidizing, deoxidizing, carbonizing, decarbonizing, purifying, strengthening, changing the nature of the metal, more or less, whatever the form, character, nature, or name the metal may have or be known by, in consequence wholly or in part of such treatment.

This invention also consists in applying to and disseminating through and amongst fluid iron of any kind, form or description, as it flows from or whilst in a transition state from a melting or re-melting furnace, cupola, fire, vessel or place of any kind or form whatever from which fluid iron may or can flow, (except from a smelting furnace,) nickel, or matter containing nickel, zinc in the form of an oxide or otherwise; manganese in the form of an oxide, carbonate, carburet, or otherwise; carbonaceous matter of any kind, or compound containing carbon; kaolin, or any matter containing kaolin, chloride of sodium, chlorates, carbonates, nitrates, or any saline, alkaline, vegetable, earthy, mineral, or metallic matter, or matters, separately or combined, and in any form, state, or condition that may be desirable for the purpose of oxidizing, deoxidizing, carbonizing, decarbonizing, purifying, alloying with the iron, or any matter contained in the iron, strengthening, changing the nature of the metal more or less, whatever the form, character, nature, or name the metal may take wholly or in part in consequence of such treatment.

An Improved Mode of Adjusting Circular Saws. Henry Laxton, of Arundel street, Strand.

This invention consists in securing a circular saw to its spindle in an oblique direction, so as to enable the saw to cut grooves and rebates of any required widths. This is effected in the following manner :—Between the saw and a collar on the spindle are two bevilled washers, each capable of being turned independently of the other; and on the opposite side, is a plain washer, having a concave recess for receiving a convex nut, which screws on to the end of the spindle and secures the saw firmly thereto. The whole is so arranged, that by changing the relative positions of the two bevilled washers, a surface more or less oblique with the axis of the spindle is presented for the saw to be secured against. Thus the obliquity of the saw with the axis of the spindle may be varied at pleasure; and grooves of various widths may be cut into the wood submitted to its action.

An Improvement in the Manufacture of Band-saws, and other Endless Bands or Hoops of Metal. Robert Thomas Eadon, Sheffield.

This invention consists in binding a bar or rod of cast steel, or other metal suitable for the purpose required, into a circular form, and welding the ends thereof in order to insure a perfect joint; then in reducing the bar to the thickness required between rolls, whereby an endless band, whether for band-saws, casks, hoops, or for other use, is produced, of uniform strength.

The exact manner of carrying out the invention is as follows:—A bar of welding cast-steel having been prepared, of length, width, and strength suitable to the size of the saw, band, or hoop required, and of sufficient strength and weight to enable a smith to obtain a perfect weld, the same is welded into a hoop. This hoop is put into such a furnace as is ordinarily used in the saw trade, and, when heated red hot, it is placed between a pair of open-end rolls. The pressure exerted upon the rolls is regulated by a screw made to act upon the top roll: the alternate heating and rolling are continued until the hoop or band is reduced to the extent required. If intended for a band-saw, it is toothed with a bed and punch with the common press or fly. The teeth and back of the saw are afterwards filed.

The saw-band or hoop is now folded up into several coils and put into a saw hardening furnace: it is heated red hot and precipitated into a cistern containing fish oil; when removed therefrom, the oil is partially wiped off, and the coil again placed in the furnace until the requisite temper is obtained. The saw-band or hoop is afterwards smithed, planished, or hammered, until it is free from twist and bends, and straightened on both edges. The saw-band is then ground and glazed in the ordinary manner, except that in turning over from one side to the other, the saw-hoop or band is turned inside out, so that both sides may be ground and glazed. Any irregularities or bends that have been caused by grinding are afterwards straightened on a wood block of lignum-vitæ or other hard wood, by a smooth-faced hammer, so as not to cut or mark the body. The band is afterwards tempered by "blueing" in an ordinary blueing stove, in sand; any elasticity that hammering, grinding, etc., may have deprived it of being thereby restored. When the teeth have been shaped in the ordinary manner followed in the trade, the saw is ready for use.

Descripticn of Improved Corn-mill Machinery. Mr. Alexander Wright, of Patrick.

In the ordinary mode of grinding wheat, the grain, after being properly cleaned, is placed in a hopper above the millstones, and is thence fed in a regular manner into the eye or central aperture of the running or top stone, and by the centrifugal effect of the stone's rotation is carried round in a spiral direction between the two stones, until it gradually reaches the circumference of the stones, whence it issues in a ground state and passes down a spout into a bin below. In this system, which has been in use for centuries, there is, the writer thinks, ample room for improvement, involving both an increase in the speed of production, and superior quality of the flour.

An injurious effect is exercised upon the grain by its coming in contact with the central portion of the stones, as at that part it is tortured over and over on a sharp flinty surface of nearly five feet area, and with a motion which, being insufficient to grind it, tears the husk and kernel, to the detriment of the flour; this action taking place before the grain reaches that portion of the stones where there is motion at once sufficient to grind it and to discharge the ground particles from between the stones.

In the improved arrangement of corn-mill machinery, forming the subject of the present paper, the area at the center of the stones is altogether removed, the stones being cut away at that part; whilst in the opening there is inserted a large distributing disc, which is driven at a high speed, for the purpose of delivering the prepared grain between the stones, and also causing a current of air as afterwards described.

The grain is supplied from a hopper along a spout to a small crushing apparatus, (placed above the stones,) consisting of a pair of rollers driven from the damsel spindle, by means of bevil wheels. The grain passing between the rollers on its way to the grinding surfaces, is bruised or crushed, which greatly facilitates the grinding process, and improves the quality of the flour. The crushed grain from the rollers falls upon the distributing disc, the surface of which is corrugated or notched radially, to aid the distribution of the grain : the distributor is recessed half way into the face of each stone, and revolves clear of the lower stationary stone, and also of the running stone.

The distributor is constructed so as to serve the double purpose of delivering the grain between the stones, and also of supplying a current of cool air along with the grain. The distribution disc, on which the crushed grain falls, forms the upper side of a horizontal fan, which discharges a current of cool air along with the grain between the stones. The air is drawn up through the enlarged eye of the bed stone, which is left open, like the eye of the running stone, to allow of the free introduction of cool air, to act upon the grain where the grinding action comes into most effective play. The fan of the distributor is made with a number of curved arms, the spaces between which form horizontal curved passages for the air ; the outer ends of the air passages terminate at the circumference of the distributor, and the inner ends open into the central chamber of the fan, which communicates at the under side with trumpet-mouthed air tubes which pass through the eye of the lower stone and are thus capable of taking in cool air from below.

The action of the fan is such that, as the upper stone revolves, a current of cool air is drawn up through the trumpet-mouthed tubes, and discharged in a powerful stream upon the grain. By these means the grinding is accomplished very rapidly and well, and the grain and flour are kept quite cool and in good order. If the simple rate of the stones does not produce a sufficient current of air by means of the fan, as may be the case with stones of large diameter, the fan is driven at a greater velocity than that of the stones, by means of gearing, and is arranged to revolve freely about the mill spindle.

A further improvement is effected in the discharge of the flour from the millstones. Instead of allowing the flour to be carried round the inside of the casing, so as to be delivered down a spout placed at one side, the casing is formed with openings almost all round it, through which the flour falls in a thin film into the conical or funnel-shaped casing below. In passing down this casing the flour is exposed to the beneficial action of the upward current of cool air, which is ascending to supply the fan—the heated air passing off by the ordinary opening in the case over the top of the running stone. When the floor leaves the casing, by a spout at the bottom, it is in a perfectly cool state, and may be immediately bolted and put up into sacks for the baker.

The present improvements may be applied to a certain extent to old stones ; but in erecting new mills or machinery, the stones should be made considerably larger than hitherto ; that is to say, they should be at least six feet in diameter, instead of only four feet or four feet six inches. These large stones should be composed of a ring of burr blocks one foot broad, built up and nicely joined round a center ring, composed either of a single piece of free-stone, or of cast-iron.

Stones fitted up with the various improvements above described have, in practice, been found to do double, and in some cases more than double, the work done by ordinary stones, whilst the flour produced has been of greatly superior quality ; and where the larger size of stones can be got, still better results will be obtained, whilst the motion will be easier, and there will be less of the tremor and vibration which, with ordinary arrangements, frequently annoys and frustrates the expectations of the most careful miller.

## Trial of Reapers and Mowers.

*Commencing July 14th, 1857, at Syracuse, N. Y., under the direction of the United States Agricultural Society. Hon. Marshall P. Wilder, President, Major Benjamin Perley Poore, Secretary.*

Previously to Tuesday, the day appointed for the opening exercises, H. S. Olcott, Secretary of the Implement Committee, had received notifications of entries for 38 mowers, 28 reapers, 22 combined machines for both mowing and reaping, 2 reapers with automaton rakes, and sundry other machines for various farm purposes. Only a small part of these implements, however, appear to have been actually entered. Most of those entered were either on the ground the week before, or were brought forward on Monday morning. Monday was altogether a quiet, pleasant day, and the arrangements afforded to inventors and manufacturers the best opportunity of the whole week for exhibiting their machines at rest. The pleasant, shady grounds of the Onondaga County Agricultural Society, were used for the purpose. This Society's great tent was spread for the occasion. A tent for the President and officers of the United States Agricultural Society, a large tent for refreshments, and several others for various purposes, adorned the grounds, and added much to the comfort of exhibitors and others.

On Tuesday morning, after the large procession had reached the grounds, at about eleven o'clock, Gov. King, accompanied by Gov. Morehead, of Kentucky, and Ex-Gov. Clark, of New-York, arrived on the ground under the escort of the marshals, and the Syracuse Dragoons and Washington artillery, a squad of the latter firing a salute as they entered the ground, and the band playing "Hail Columbia."

The machines then formed, and marched in procession around the track, preceded by the marshals and Sutherland's brass band. When in front of the President's stand, the procession halted, and the President of the Society, the Hon. Marshall P. Wilder, then delivered an address, characterized by his usual earnestness and devotion to the cause of agriculture.

In addressing the board of judges, Mr. Wilder said, I shall not attempt to instruct you minutely in reference to your duties. There are a few points, however, to which I deem it important that your special attention should be directed.

1. Cost of machine. 2. Simplicity of construction. 3. Durability. 4. Effective power,—or power required for a given amount of work, including the necessary attendance. 5. The rate of motion, or what a machine will accomplish under an ordinary rate of speed for daily work. 6. Quality of work, or the manner of leaving the grass and grain. 7. Facility of management. 8. Any machine posssessing special points of excellence, although as a whole it may be inferior, such special advantages should be noted, and a diploma awarded therefor.

At the conclusion of Mr. Wilder's address, which abounded in practical good sense, and was listened to with great apparent interest, loud calls were made for Governor King, who came forward and addressed the crowd in some very appropriate remarks, in which he paid a handsome compliment to the President of the United States Agricultural Society, Mr. Wilder.

Governor Morehead, of Kentucky, being vociferously called for, next came forward amid hearty cheers, and made a most interesting and patriotic speech, in which he represented his State as ever true to the Union; and as standing with one arm around the agitators of the North and the other around the disorganizers of the South, hugging each to her bosom, and trying to make them love each other, but destined to be the bloody ground of fraternal strife, if she could not succeed. He expresses a wish that the extremists of North and South might oftener come together as on this occasion, and look each other in the face. He thought that neither might look so ugly to the other as both seem to think, while keeping apart.

These ceremonies concluded, next followed a brilliant collation, in the President's tent, of which the President, the invited guests, the marshals and gentlemen connected with the press partook. When "the love of eating ceased," and good things could no longer tempt the appetite, the line of march was taken up for a large, and unfortunately a rough and tangled clover field, one mile distant. Reapers, mowers, six pounders, and other signs of peace and of war alternated along the line. The cannon we suppose were well enough, though we could not exactly see why the smell of powder should mingle with the fragrance of newly cut clover. It was about two o'clock when the procession reached the field.

The machines entered the field in the manner in which they had drawn, as follows:

1. D. M. Osborne, Buffalo, mower. 2. Seymour & Morgan, Brockport, N. Y., combined machine. 3. Miller, Wright & Co., Louisville, Ky., combined machine. 4. Warder, Brokaw & Co., Springfield, Ohio, combined mower. 5. Ball, Aultman & Co., Canton, Ohio, mower. 6. T. R. Hussey, Auburn, N. Y., combined machine. 7. M. Hollenbeck, Albany, mower. 8. Howland Sanford, Poughkeepsie, N. Y., combined machine. 9. W. A. Wood, Hoosick Falls, N. Y., mower. 10. W. F. Ketchum, Buffalo, mower. 11. T. P. Burrall, Geneva, N. Y., combined machine. 12. Pells Manny, Freeport, Ill., mower. 13. Ball, Aultman & Co., mower. 14. W. A. Wood, Hoosick Falls, N. Y., combined machine. 15. A. H. Caryle, Boston, Mass., mower. 16. W. H. Hovey, Springfield, Mass., mower. 17. Rufus Dutton, Dayton, Ohio, combined machine. 18. R. L. Allen, New-York, mower. 19. Pruyn & Lansing, Albany, N. Y., mower.

An acre of ground was staked out for each machine. The unevenness of the surface and the lodged condition of the clover were calculated to put the machines to a hard trial. If they could stand the test, it was thought they could stand anything. The teams were started at three o'clock, and at four nearly the whole field was cut over.

Ketchum's improved harvester, manufactured by Messrs. Howard & Co., of Buffalo, made wholly of iron, and certainly a beautiful piece of work, did its acre expeditiously and well.

J. Manny's Patent Adjustible Self-Raking Reaper, manufactured by Manny & Co., Freeport, Ill., also did its work rapidly and in good style, and apparently without violent effort on the part of the horses. This is a recent Pells Manny, father to J. H. Manny, and we heard it said, that the machine here used was the first and the only one yet manufactured. The son, we apprehend was not easy to be beat; but if the father should beat him, we should not be sorry.

Of Allen's Mowing Machine, we heard it said by many that it worked admirably. We saw little of its work, as it was impossible among so many machines, far apart from each other, to make accurate observations on each. But having seen Allen's mower in operation a few days before in Farmington, Conn., where it worked well under exceedingly unfavorable circumstances, we were prepared to think well of it.

We are prepared to think well also of J. H. Manny's patents, both of combined reaper and mower and the single mower, as also of Kirby's improved reaping and mowing machine, and of Burrell's mower and reeper, the frame of which is wholly of iron, its draft appearing to be easy, and its work well done.

It will be understood that there were other machines than those we have named on the ground. We were under necessity of leaving at an early stage of the trial.

Our remarks relate to only a few which attracted our particular attention. The investigation of the Committee, we hope will be thorough, persevering, impartial and as far as the nature of the case admits, reliable; though it must be admitted that their task is as difficult as it is important, and while from our knowledge of the men, we are inclined to believe that "If any right arm could save Troy, these would," yet we fear it will be utterly impossible for them either to do full and equal justice to the manufacturers of these machines, or to give the farmers more than half of the real, reliable information they want. If they can do so much, it will be something; it will be worth a good deal; and we shall thank the United States Agricultural Society, at least, for what it has attempted, and for what we trust it will have partially accomplished.

Our confident expectation is, that great improvements are yet to be made in mowing and reaping by other power than that of human muscles. None but the smallest farmers should think of mowing and reaping much longer in the old way. It was very naughty in the human race, that they did not search out better ways long ago.

In the present state of things, we see not how large farmers, who *must* have some one of these machines *now*, can do better than to use the best light they can get. For smaller farmers, would it not be wise, either to wait a little, or several of them to join in the purchase of a machine to be used in common, or perhaps to hire their grass and grain by a machine held by some one in their neighborhood for the purpose.

Certainly it would not be very comfortable for a farmer of limited means, who should have purchased a machine, with the hope of its lasting many years, to be told in a few months, that his machine was behind the times, only about as good as an old almanac.

TRIAL OF MOWERS NEAR HOMER AND COURTLANDVILLE, COURTLAND CO., N. Y.

On our way home from the National trial of Mowers and Reapers, at Syracuse, we stopped a day for the purpose of being present at a less extensive, but to us hardly less interesting trial of mowers, on two adjoining farms, midway between the beautiful and flourishing villages of Homer and Courtlandville.

This trial came off on Wednesday afternoon, July 21st, under the auspices of the Courtland County Agricultural Society. The first field entered was of very heavy clover and herdsgrass, considerably lodged in spots. The borders had been previously cut and the hay removed. This gave ample room for the immense assemblage of farmers and others to witness the working of the machines without crowding upon the teams.

There were present ten mowers, nine of which were worked. An acre had been previously marked off for each. The field was cut over in about one hour, some of the teams finishing their portions in lesss than half that time. But we did not understand that this was a match on time, but rather a test of the quality of work done by each machine, as the teams seemed to be going and standing alternately, to suit the investigation of the committee.

The work of this field being finished, the line of march was taken for another field on an adjacent farm. Here, too, the borders had been relieved of their crop to admit the multitudes, and the field was soon set off into three quarter acre parallelograms, and a proper mowing match on time commenced. It was a brilliant scene. The grass on this field was lighter than in the other, and for the most part stood erect. Most of the lots were cut in from twelve to twenty minutes. But one machine, we believe, failed of doing its work quickly enough, and that one failed altogether owing to a break of a finger and one or more cutters.

Our readers, no doubt, are by this time complaining that we deal too much in generalities. They want we should tell them outright which was the best machine, which was the worst, and so of all the grades. But really this is a harder task than we are able to accomplish. The considerable number of the machines, all in motion at once; their distance from each other; the rapidity of the work; the falling rain, which hindered our taking notes, and the difficulty of ascertaining precisely the character of the work while yet covered with the crop, all rendered it impossible for us to feel very confident in any opinions we might form. Wishing that we could do justice to all, but conscious that we can not, and sensitively alive to the importance of doing injustice to no worthy competitor, we shall attempt little more than to name the machines, with a passing remark on some of them.

1. Hussey's patent, manufactured by T. R. Hussey, at Auburn. This looked like an "old settler;" and if we were rightly informed it was the first mowing machine introduced into this region. Many farmers said in our hearing; "It is an old friend; give us the old Hussey after all; it is the best yet," and words to that effect. Some accused other patentees of stealing Hussey's "thunder," and said that the infringement was shameful, and never ought to be sustained. Of all this we leave others to judge. But it is certain that Hussey's machine did its work well and expeditiously, and was of easy draft.

2. Ketchum's Patent, manufactured by R. L. Howard, of Buffalo, N. Y. This is wholly of iron. It appeared to be a good piece of workmanship, and it worked well.

3. J. H. Manny's Patent, with Daggert's improvement, manufactured by Daggert & Jordan. Do not know how it worked, but think well.

4. J. H. Manny's Patent, with Wood's improvement, manufactured by Walter & Wood, at Hoosick Falls, Renss county, N. Y. Remark same as of the last.

5. Hallenbeck's Patent, manufactured by Hallenbeck & Cunningham, Albany, N.Y. Our impressions of it favorable.

6. Ketchum's Patent, owned by Jedediah Barber, of Homer; another old settler, said in our hearing to have been the first sold in that village. Worked well.

7. R. L. Allen's Patent, manufactured by A. B. Allen, Brooklyn, and sold by R. L. Allen, New-York. Worked well, but not quite as well as we have seen it other wheres. Our impression is, that in heavy tangled grass, in a bottom not over smooth, it does better *relatively* than in lighter and smoother work. It is an excellent grass-cutter.

8. A mower got up by Stephen W. Card, of Homer, not yet patented, we believe, but protected by a caveat. This was the only machine of the kind yet manufactured. Promises well we should think, but can say nothing positive.

Last, but it may yet turn out not least, a new machine, on really new principles, so far as we know, manufactured by Stephen R. Hunter, of Courtlandville. We have long suspected that sooner or later, a circular motion would take the place of the vibrating motion in all these machines. Mr. Hunter's machine is an effort in that direction, and though it does not confirm our previous expectations of a revolution in the grand principle of cutting grass and grain, it strengthens them. We advise Mr. H. to persevere, nothing discouraged by the breaking of a knife or two and not finishing his lot. He had not had time to complete his machine, nor to practice with in advance of the trial. We strongly incline to the belief that he has got hold of an *idea* which will be of great utility. Let it be thoroughly tested.

The time was a pleasant one, with the exception of a little rain, and the gathering could not fail to give a favorable impression of the farmers and farming in this beautiful valley.

# THE FAMILY CIRCLE.

## Scientific.

### THE WEATHER.

APPEARANCE OF BIRDS, FLOWERS, ETC., IN NICHOLS, TIOGA CO., N. Y., IN JUNE, 1857.

By R. Howell.

*Place of Observation, 42 degrees North, on a Diluvial Formation, about 40 feet above the Susquehanna River.*

| June. | 6 A.M. | 1 P.M. | 9 P.M. | | | REMARKS. |
|---|---|---|---|---|---|---|
| 1 | 61 | 81 | 64 | South | Cloudy. | Hard shower before day; lilacs begin to bloom. |
| 2 | 56 | 82 | 55 | N. W. | " | Few dashes of rain; crane's-bill begins to blow. |
| 3 | 49 | 77 | 56 | West | " | Few dashes of rain. |
| 4 | 40 | 65 | 48 | North | " | |
| 5 | 40 | 59 | 48 | N. W. | " | Light black frost in morning. |
| 6 | 39 | 69 | 52 | West | " | Quite a frost in morning. |
| 7 | 53 | 62 | 56 | " | " | Considerable rain in N.W.; began at 5 o'clock. |
| 8 | 53 | 69 | 61 | S. W. | " | Light rain in P.M., and hard rain in evening. |
| 9 | 57 | 70 | 59 | " | " | Hard rain at sunrise; moderate rain all day. |
| 10 | 58 | 76 | 62 | " | " | Light rain in A.M.; peony begins to bloom. |
| 11 | 58 | 77 | 57 | " | " | Hard rain all A.M.; at intervals in P.M. |
| 12 | 52 | 78 | 61 | S.&N. | " | Showers in P.M. and evening. |
| 13 | 53 | 84 | 64 | S. W. | " | Sprinkle of rain. |
| 14 | 54 | 71 | 53 | North | " | |
| 15 | 49 | 80 | 57 | " | " | [April. |
| 16 | 59 | 77 | 58 | South | " | Hard rain near all day; roads as muddy as |
| 17 | 59 | 84 | 64 | " | " | Light rain near night. [in evening. |
| 18 | 63 | 72 | 62 | S.East | " | Rain in morning; aurora and sheet lightning |
| 19 | 60 | 79 | 56 | " | " | Hard rain before light; wild blackberry begins to bloom. |
| 20 | 53 | 79 | 61 | " | " | Short hard shower at dark. |
| 21 | 60 | 83 | 56 | " | " | |
| 22 | 61 | 78 | 54 | S.&N. | " | Hard rain nearly all the P.M. |
| 23 | 52 | 68 | 56 | North | " | Rain all night; a few dashes near night. |
| 24 | 46 | 78 | 62 | West | " | Button rose begins to bloom. |
| 25 | 53 | 80 | 58 | " | " | June 25th and 26th, a majority of farmers hoe corn the first time. |
| 26 | 54 | 84 | 58 | " | " | |
| 27 | 58 | 84 | 62 | North | " | [evening. |
| 28 | 63 | 90 | 72 | South | " | Sprinkle of rain before light; lightning in |
| 29 | 68 | 64 | 62 | " | " | Light rain before day and hard rain in P.M. |
| 30 | 59 | 73 | 57 | " | " | Considerable rain before and after the day. |

PROSPECT OF THE CROPS IN NICHOLS AND VICINITY, JULY 13th, 1857.

Of wheat, there was sown last fall more than usual, perhaps on the account of the crop last year being but little injured by the insect wheat-fly or midge; the wheat this summer appears finer than I have seen before in a number of years, being very large and even, but I understand the insects have appeared in some crops in great numbers. I examined but two fields, and them but lightly; they were Mediterranean species, which are not generally as much injured as other species by the insect; this insect has been here nine or ten years. The rye crop is very fine, and a large amount on the ground. Oats, with the exception of a few fields on hill, are better than before in a number of years, and most probably a number of fields will be too large. The corn is about two weeks later than usual at this time of year; a number of fields have been ploughed up and sown with buckwheat or are being now sown. There never was a season that cut-worms and birds have done so much damage as this year. Potatoes, so far, very large, that is, the tops. Meadows newly seeded generally fine; old meadows poorer than before in a number of years, being very thin and short; the hay must be light, also the pastures do grow but little, and older fields thin in the bottom, being injured by the drouth last season and also by the winter.

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The usual chapter on Chemistry is omitted, on account of the absence of the Senior. "The Markets" are also necessarily omitted.

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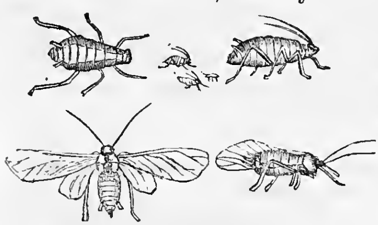
## Insects Injurious to Vegetation.

[Insects attacking the Cotton Plant, continued.]

In continuing this branch of our subject, we present our readers with the following extracts from Mr. Glover's Report, referred to in our last issue.

The Cotton-Louse.—*Aphis?*

When the cotton-plant is very young and tender, it is particularly subject to the attacks of the cotton-louse, which by means of its piercer, penetrates the outer coating, or parenchyma of the leaf or tender shoots, and sucks the sap from the wound. The under part of the leaves or young shoots are the places mostly selected, and the constant punctures and consequent drainage of sap enfeebles the plant and causes the leaf to curl up, turn yellow, and subsequently fall to the ground. The young lice are extremely minute, and of a greenish color; but when they become older, they are about a tenth of an inch in



length, and often dark green; but, in some instances, they are almost black. It is conjectured that the color somewhat depends upon the health of the plant as well as that of the insect, or, perhaps, upon their food, as I have seen green and black lice promiscuously feeding upon the same plant. The female produces her young alive throughout the summer, when she may often be seen surrounded by her numerous progeny, sucking the juice from the leaves and still producing young. Some naturalists state that the females, late in the fall, produce eggs, for the generation of the next spring. If so, it is in order to preserve the species, as the insects themselves are easily killed by frost and cold; and their increase would be incalculable were it not that Nature has provided many enemies among the insect tribes to prevent their too rapid multiplication. Both males and females are said to possess wings at certain seasons; but the females and young in summer appear to be wingless. The end of the abdomen of both sexes is provided with two slender tubes, rising like horns from the back, from which often exudes the "honey-dew," or sweet gummy substance, seen sticking to the upper sides of the leaves beneath them, and which forms the favorite food of myriads of ants. Although young plants are mostly attacked, yet I have seen old "stands," in Georgia, with their young shoots, completely covered with this pest as late as November.

The principal insects that destroy the aphides are the lady-bird, the lace-fly, and the syrphus, all of which wage incessant war upon them, and devour all they can find. Another fly, the ichneumon, likewise lays an egg in the body of the louse, which, hatching into a grub, devours the inside of the still living insect until it eventually dies, clinging to the leaf even in death, and the fly makes its appearance from the old skin of the aphis.

When old cotton plants are suffering from the attacks of the louse, many planters cause their tops to be cut off and burned, and by so doing partially succeed in destroying them; yet, when we consider that, by this method, many young blossoms and "forms" must likewise be destroyed, it must be confessed that the remedy is almost as bad as the disease. In a garden or green-house, a solution of whale-oil soap, from a syringe, showered upon the upper and under parts of the foliage, has been used with much advantage; yet, upon the extended scale of a cotton plantation, such a remedy is altogether impracticable, and, until we can collect further information upon this subject from intelligent planters, we must rest content with the instinct of our insect allies.

THE LEAF-HOPPER.—*Tetigonia?*

The leaves of the cotton-plant are often injured by the leaf-hopper. This small insect is found upon the plant in the larva, pupa and perfect state. In all these forms, it sucks the sap from the leaf, causing small diseased and whitish-looking spots, much disfiguring the foliage, and injuring the plant itself, when the insects are very numerous. They are also found in great numbers on grape-vines, in Florida, and injure the foliage to a considerable degree.

The perfect insects are very small, measuring only from one-tenth to three-twentieths of an inch in length. The head is somewhat crescent-shaped, of a green color, with two red spots on the upper surface. The thorax is also green, with two crescent-shaped spots of red on each side of a small red spot in the center The wing-cases are green, with two stripes or bands of red, running parallel down each wing-case, from the thorax to the upper margin, where they form an acute angle. The legs are yellowish-green, the hinder pair being much longer than the others, and furnished with bristles on the tibia. In the larva state, they are able to leap with great agility; but it is only in the perfect state that they are able to fly, the under-wings being hidden by the wing-cases, and not perfectly developed in the larvæ or pupæ. There are several species of these insects found upon cotton, which it will not be necessary here to describe, as their natural history and habits are nearly the same.

In using the lantern already described, it was found that thousands of these small insects were attracted from some grape-vines in an adjoining field. The use of fires or lights may therefore be recommended to destroy them, when they become very numerous, although, as regards the cotton, they are not often found on it in numbers sufficient to do much harm.

THE RED-SPIDER.—*Acarus?*

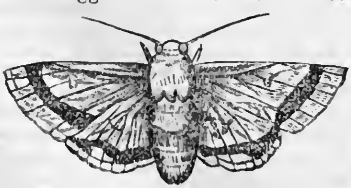
Much injury is done to the cotton-leaf by a minute red spider, which presents very much the appearance of incipient rust, except that the leaf is of a more rusty-brown in spots, instead of the bright-yellow of the real rust. This red spider principally attacks the under side of the leaf, the spots caused by its punctures turning brown, and finally increasing until it is completely stung all over, and falls from the plant.

This insect is extremely minute, and when on the leaf, it can scarcely be discerned by the naked eye. Some of the young appear to be of a greenish cast; but when they are advanced in age, the abdomen assumes a dark crimson shade, with darker maroon spots upon its upper surface. The legs, which are hairy, are eight in number.

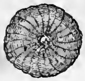
This family of the mites, (acari,) do much injury to vegetable life, as they are so extremely minute as to escape the notice of the superficial observer. When they infest grape-houses, or rose-bushes, it has been recommended to dust the leaves while moist with flour of sulphur.

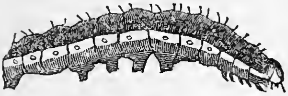
THE BOLL-WORM.—*Heliothes?*

The egg of the boll-worm moth is generally deposited on the outside of the involucel, or outer calyx of the flower, and I have taken it from the outer calyx even of the young boll itself. It has been stated that the egg is laid upon the stem, which also forms the first food of the young worm; but, after a thorough and careful examination of several hundred stems, I found only one egg in this situation, and that, from its being upon its side instead of its base, had evidently been misplaced, and never hatched.



The egg of the boll-worm is laid singly upon the involucel, about twilight, and is of a somewhat oval shape, rather flattened at the top and bottom, and is formed with ridges on the side, which meet at the top in one common center. The color is yellowish until nearly hatched, when it becomes darker, the young enclosed caterpillar showing through the translucent shell. A single boll-worm moth, dissected by Dr. John Gamble, of Tallahasse, contained at least five hundred eggs, which differed much from those of the cotton-caterpillar moth, which are round and flattened like a turnip, of a beautiful green color, and scarcely to be distinguished from the leaf on which they are deposited. The eggs of the boll-worm moth hatched in three or four days after being brought in from the field, and the young worms soon commenced feeding upon the parenchyma, or tender fleshy substance of the calyx, on the outside, near where the egg was laid. When they had gained strength, they pierced through the outer calyx, some through the petals into the enclosed flower-bud, while others penetrated the boll itself. Sometimes the pistil and stamens are found to be distorted and discolored, which is caused by the young worm when inside the bud, eating the stamens and injuring the pistil, so that it is drawn over to one side. When this is the case, the young worm bores through the bottom of the flower, into the young boll, before the old corolla, pistil, and stamens fall off, leaving the young boll, inner calyx and outer calyx, or involucel, still adhering to the foot-stalk, with the young worm safe in the growing boll.





The number of buds destroyed by this worm is very great, as they fall off when quite young, and are scarcely observed as they lie brown and withering on the ground. The instinct of the caterpillar, however, teaches it to forsake a bud or boll about to fall, and either to seek another or to fasten itself to a leaf, on which it remains until the skin is shed; it then attacks another bud or boll in a similar manner, until, at length, it acquires size and strength sufficient to enable it to bore into the nearly-matured bolls, which are entirely destroyed by its punctures; for, if the interior is not devoured, the rain penetrates the boll and the cotton soon becomes rotten and of no value.

The rotted bolls serve also for food and shelter to numerous small insects, such as those already mentioned, and which have been erroneously accused of causing the rot. Whenever a young boll or bud is seen with the involucre, or outer calyx, called by some the "ruffle," spread open, it may be safely concluded that it has been attacked by the worm, and will soon fall to the ground and perish. The older bolls, however, remain on the plant; and if many of the fallen buds or bolls be closely examined, the greater portion of them will be found to have been previously pierced by the worm, the few exceptions being caused either by the minute punctures of some of the plant-bugs, from rain, or other atmospheric influences. Those injured by the worm can be distinguished by a small hole on the outside where it entered, and which, when cut open, will generally be found partially filled with small fragments of fœces.

When very young the boll-worm is able to suspend itself by a thread, if blown or brushed from the boll or leaf on which it rested. After changing its skin several times and attaining its full size, the caterpillar descends into the ground, where it makes a silky cocoon, interwoven with particles of gravel and earth, in which it changes into a bright chestnut-brown chrysalis. The worms which entered the ground in September and October, appeared as perfect moths about the end of November.

A boll-worm, which was bred from an egg found upon the involucel, or ruffle, of the flower-bud, grew to rather more than a twentieth of an inch in length by the third day, when it shed its skin, having eaten in the meantime nothing but the parenchyma, or tender fleshy substance from the outside. On the fifth day it bored or pierced through the outer calyx, and commenced feeding upon the inner; and on the sixth day it again shed its skin, and had increased to about the tenth of an inch in length. On the tenth day it again shed its skin, ate the interior of the young flower-bud, and had grown much larger. On the fourteenth day it for the fifth time shed its skin, attacked and ate into a young boll, and had increased to thirteen-twentieths of an inch in length. From this time it ate nothing but the inside of the boll, and on the twentieth day the skin was again shed, and it had grown to the length of an inch and one-tenth, but unfortunately died before completing its final change.

These moths probably lay their eggs on some other plants when the cotton is inaccessible, as a young boll-worm was found this season in the corolla of the flower of a squash, devouring the pistils and stamens; and as there is a striking similarity between the boll-worm and the corn-worm moth, described in the Agricultural Report for 1854, in the appearance, food and habits, alike in the caterpillar, chrysalis, and perfect state, it will perhaps prove that the boll-worm may be the young of the corn-worm moth, and that the eggs are deposited on the young boll, as the nearest substitute for green corn, and placed upon them only when the corn has become too old and hard for their food.

Colonel B. A. Sorsby, of Columbus, in Georgia, has bred both these insects, and declares them to be the same; and, moreover, when, according to his advice, the corn was carefully wormed on two or three plantations, the boll-worms did not make their appearance that season on the cotton, notwithstanding that, on neighboring plantations, they committed great ravages.

The worms, or caterpillars, have six pectoral, eight ventral, and two anal feet, and creep along with a gradual motion, quite unlike the looping gait of the true cotton-caterpillar, and vary much in color and markings, some being brown, while others are almost green. All are more or less spotted with black, and slightly covered with short hairs. These variations of color may perhaps be caused by the food of the caterpillar. Some planters assert that, in the earlier part of the season, the green worms are found in the greatest number, while the dark brown are seen later in the fall, as we know is the case with the cotton-caterpillar.

The upper wings of the moth are yellowish, in some specimens having a shade of green, but in others of red. There is an irregular dark band running across the wing, about an eighth of an inch from the margin, and a crescent-shaped dark spot near the center; several dark spots, each enclosing a white mark, are also discovered on the margin; the under wings are lighter colored, with a broad black border on the margin, and are also veined distinctly with the same color. In the black border, however, there is a brownish-yellow spot of the same color as the rest of the under wings, which is more distinct in some specimens than in others, but may always be plainly perceived. There is also, in most specimens, a black mark or line in the middle of the under-wings, on the nervure; but, in some, it is very indistinct.

These moths multiply very rapidly; for, as I have before observed, one female moth sometimes contains five hundred eggs, which, if hatched in safety, would rapidly infest a whole field, three generations being produced in the course of a year.

In an interesting communication from Colonel Benjamin F. Whitner, of Tallahassee, he states that the boll-worm was scarcely known in his neighborhood before the year 1841; and yet, in the short period of fourteen years, it had increased to such a degree as to have become one of the greatest enemies to the cotton on several plantations in that vicinity.

It has been recommended to light fires in various parts of the plantations, at the season when the first moths of this insect make their appearance, as they are attracted by light, and perish in great numbers in the flames; and, if the first brood of females be thus destroyed, their numbers must necessarily be reduced, as it is highly probable that it is the second and third generations which do the principal damage to the crops. Some successful experiments in killing these moths with molasses and vinegar were made by Captain Sorsby a year or two ago, which I here describe in his own words:

"We procured eighteen common-sized dinner-plates, into each of which we put about half a gill of vinegar and molasses, previously prepared in the proportion of four parts of the former to one of the latter. These plates were set on small stakes, or poles, driven into the ground in the cotton-fields, one to about each three acres, and reaching a little above the cotton plant, with a six-inch-square board tacked on the top to receive the plate. These arrangements were made in the evening soon after the flies had made their appearance. The next morning we found from eighteen to thirty-five moths to each plate. The experiment was continued for five or six days, distributing the plates over the entire field, each day's success decreasing until the number was reduced to two or three to each plate, when it was abandoned as being no longer worthy of the trouble. The crop that year was but very little injured by the boll-worm. The flies were caught, in their eagerness to feed upon the mixture, by alighting into it and being unable to make their escape. They were doubtless attracted by the odor of the preparation, the vinegar probably being an important agent in the matter. As flies feed only at night, the plates should be visited late every evening, the insects taken out, and the vessels replenished, as circumstances may require. I have tried the experiment with results equally satisfactory, and shall continue it until a better one is adopted." It might be well also to try the lantern-trap before mentioned, as another means of destruction, and, likewise, the method of poisoning recommended in the general remarks on insects. As it appears from Colonel Sorsby's communication that the moth is attracted by, and feeds with avidity upon molasses and vinegar, could not some tasteless and effective poison be mixed with this liquid, so that all the early moths which might partake of it would be destroyed before laying their eggs?

THE RED-BUG, OR COTTON-STAINER.—*Lygæus?*

This destructive insect is found by millions in East Florida on the cotton plantations, where it does immense damage by staining the fibre of the cotton in the bolls, and rendering it unfit for use where pure white fabrics are required. The specimens

figured were found near Jacksonville, in October, on the open bolls, under the dried calyx, and congregating together on the dead leaves under the plants, or on rotten logs or decayed wood. Several of the open bolls were actually red with these insects, exhibiting every stage of growth, from the larva to the perfect bug, all clustered together in such masses as almost to hide the white of the cotton itself. The beak, or rostrum, is four-jointed, with the end blackish, and, when not in use, is re-curved under the thorax, which is somewhat triangular in shape, with the anterior part red; a narrow, distinct band of whitish-yellow divides the thorax from the head; the posterior part is black, edged between the thorax and wing-cases with whitish-yellow; the scutellum is triangular, red, and edged with a distinct line of whitish-yellow on each side, and partly down the center of the wing-case; the elytræ, or wing-cases, are flat, brownish-black, and containing two distinct x-shaped whitish-yellow lines on them, intersecting each other near the center; the wing-cases are also edged with a distinct yellowish line, as far as the x. The body is flattened, and, in the female, projects on each side beyond the wing-cases, showing the bright red of the abdomen, and contrasting with the dark color of the wing-cases. The under wings are hidden under the upper wing cases, and are transparent, veined, and of a yellowish color, clouded with black. The thighs of the fore-legs are somewhat spiny near the tibiæ, and of a red color. The tibiæ and tarsi are black; the under part of the body is bright red, with rings of yellowish-white running around it on the edge of each segment.

The female produces about one hundred eggs; the young larva is completely red, almost scarlet, with distinct whitish-yellow bands around the body, on the edge of each segment. The thighs are red, with the tibiæ, tarsi, and antennæ blackish.

The pupa differs only in size and in having the unformed wing-cases very small and black, contrasting strongly with the vivid red of the body.

The perfect male is about three fifths an inch in length, and the female about seven tenths of an inch, from the head to the end of the abdomen. They are similar in shape and color, differing only in size. The head and eyes are red, the antennæ black, with four long joints.

The following communication on the subject of this insect was received from Mr. B. Hopkins, of Jacksonville, a practical Sea-Island planter, of nearly thirty years experience:

"The 'red bugs,' or, as they are sometimes properly denominated, the 'cotton-stainers,' generally make their appearance about August or late in July, which is near the usual season for cotton to begin to open. They can readily be distinguished from other bugs, harmless in their nature, by their being of a red color, and more sluggish in their movements. The nearer the fruit advances towards maturity, the more injury they do to the cotton. The pod, or boll, is perforated by this bug. Whether the staining matter is imparted to the fibre of the cotton during the perforation directly, or by a slow process diffusing itself with the sap abounding at that time in the pod, is not yet ascertained. I am of the latter opinion from the fact that almost the entire product of the boll is discolored when it opens, which does not seem at all to cause a premature development. As winter approaches they gradually retire and take refuge among the logs, or burrow into the soil at the root of the cotton-plant, where they hybernate. After a wet season, in winter, they may be found in hundreds on the sunny side of the stalks, enjoying the genial atmosphere until towards evening, when they again retire. They can be kept down very easily when there are not more than five acres planted to the hand.

"I have been in the habit of offering a reward every night to the negro that brings in the greatest quantity, each of whom is furnished with a pint bottle suspended across the shoulders, into which, as they pass along picking the cotton, they deposit all they can discover. In many instances I have seen the bottle filled by one negro in a day. They may also be greatly reduced by destroying them when they come out in winter in their half-torpid state; a torch of fire in that case is best. They may be buried a foot under ground, and most of them will still escape from their inhumation. If there should be stumps or trees in the fields, they should be burned, and that will generally reduce the quantity for a year or more. In fact, when they receive timely and proper attention, they need not be dreaded.

"No process that I know of can extract the stain produced in the bolls; it is indelible, and considerably reduces the price of the cotton in the market. These insects have been much on the increase for the last ten years, which I attribute to the excess in planting, as well as the want of proper efforts for their destruction."

It has been stated by other planters that the fœces of the insect produces the reddish or greenish stain, and that the red-bugs will collect where there are splinters and fragments of sugar cane. Advantage has already been taken of this habit to collect them by means of small chips of sugar-cane, when they may be destroyed by boiling water; and as they also collect around piles of cotton-seed, they may thus be easily decoyed and then killed, either by fire or hot water, when congregated. All stumps and dead trees standing in the field should be well burnt out. The experiment to destroy them by means of the crushed sugar-cane and poison has been tried, but as no report of the experiment has been received, it remains doubtful whether it can be recommended or not.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Origin of Plants.

"Mr. Nash:—Dear Sir:—I wish to propose a question, suggested to me by our mutual friend, whom you know to be one of the students of Nature, and an ardent inquirer into her mysterious operations—a question that I know you will elucidate and enliven, with your active mind and pen: "Do not the elementary principles of all vegetable life originate in the rocks?" Or, it might be stated thus: "Did not the elementary principles of *primal* vegetable life originate entirely from the rocks?" This question, suggests an innumerable train of curious and interesting inquiries.

It takes us back to the pre-Adamite period, when vegetable life existed in its rude and more imperfect forms. There must have been a time when the *first form* of vegetation made its appearance. Did it come from the vitalization of seeds? I believe it did. Seeds, in the first instance, must have been created by the direct power of God; but he always works by the most natural, direct, and immediate causes; and seeds probably were formed from materials at hand; *immediately at hand.* I believe there is not an element of vegetable life, on the closest analysis, that can not be found in the *atmosphere, water, soil,* and rocks; nor is there an element in the first, that can not be found in the last. Am I right? Please give us a chapter on this question, and oblige yours truly."

This was manifestly intended as a private note, but with the suppression of names we venture to publish it. It contains the germs of thought, which we should like to have the writer or any other person, who is able to do it as philosophically and as correctly, enlarge upon. For ourself, we know not why the oak springs up after the pine on old worn fields, where the acorn is not known to be imbedded in the soil; nor from what seed the blue grass comes, after the fire on our western soils; nor where the white clover, from hard pan thrown from the bottom of a well. If anybody can throw light on our correspondent's questions we will gladly give a reasonable space. There is no reason to fear that religion will suffer, nor to doubt that theology will be improved, by any candid researches into nature.

# Domestic.

## Air Poison.

People have often said that no difference can be detected in the analyzation of pure and impure air. This is one of the vulgar errors difficult to dislodge from the public brain. The fact is, that the condensed air of a crowded room gives a deposit which, if allowed to remain for a few days, forms a solid, thick, glutinous mass, having a strong odor of animal matter. If examined by the microscope, it is seen to undergo a remarkable change. First of all, it is converted into a vegetable growth, and this is followed by the production of multitudes of animalcules; a decisive proof that it must contain organic matter, otherwise it could not nourish organic beings. This was the result arrived at by Dr. Angus Smith, in his beautiful experiments on the Air and Water of towns; where he showed how the lungs and skin gave out organic matter, which is in itself a deadly poison, producing headache, sickness, disease, or epidemic, according to its strength. Why, if "a few drops of the liquid matter, obtained by the condensation of the air of a foul locality, introduced into the vein of a dog, can produce death with the usual phenomena of typhus fever," what incalculable evil must not it produce on those human beings who breathe it again and again, rendered fouler and less capable of sustaining life with every breath drawn? Such contamination of the air, and consequent hot-bed of fever and epidemic, it is easily within the power of man to remove. Ventilation and cleanliness will do all, so far as the abolition of this evil goes, and ventilation and cleanliness are not miracles to be prayed for, but certain results of common obedience to the laws of God.—*Dickens' Household Words.*

## Educate the Whole Man.

Everybody should have his head, his heart, and his hand educated; let this truth never be forgotten.

By the proper education of his head, he will be taught what is good, and what is evil—what is wise, and what is foolish—what is right, and what is wrong. By the proper education of his heart, he will be taught to love what is good, wise, and right, and to hate what is evil, foolish, and wrong; and by the proper education of his hand he will be enabled to supply his wants, to add to his comforts, and to assist those who are around him.

The highest objects of a good education are to reverence and obey God, and to love and serve mankind; everything that helps us in attaining these objects is of great value, and everything that hinders us is comparatively worthless. When wisdom reigns in the head, the hand is ever ready to do good; order and peace smile around, and sin and sorrow are almost unknown.—*Cotton Planter.*

## Statistics of English and French Agriculture.

Some interesting statistics relative to the agriculture of France and England, were given in a lecture delivered lately in Cornwall, England, by M. R. de la Trehonnais. In England, out of 50,000,000 acres cultivated, 10,000,000 are sown to wheat or other cereal crops, while in France 50,000,000 were cultivated for that purpose. The average growth of wheat per acre in England is four quarters—the quarter is eight bushels—and in France only one and three-fifth quarters; while the produce of English land is about £3 4s. per acre, and that of French £1 12s. per acre. The number of sheep grown in each country is about 35,000,000, and the wool produced about 60,000 tons; but, owing to the difference in the acreage, there is something less than one and one-half sheep per acre in England, and only about one-third of a sheep per acre in France. In France there are annually slaughtered 4,000,000 of cattle, the average weight of each being two cwt.; while in England there is not half the number slaughtered, but the average weight is five cwt.—*The Farmer.*

We can hardly believe all of the above statements. So far as true, they afford an argument in favor of large farms, which has always been the policy of England, while the reverse has prevailed in France.

## The Emigration to America.

The number of passengers arrived in the United States, during the year 1856, was 135,308 males, 89,188 females; total, 224,496—a smaller number than in any year of the last ten, except 1850, when the number was only 65,570. The largest number was in 1854, 460,474; the number in 1855 was 230,476. Of the emigrants arrived last year, there were born in Germany, 63,807; Ireland, 54,349; England, (principally Mormons,) 25,904; United States, 24,060; Great Britain and Ireland, 14,331; France, 7,246; Prussia, 7,221; British America, 9,493; China, 4,733; Wales, 3,297, etc. The number landed in New-York was, 162,108; in Boston, 19,225; New-Orleans, 18,758; Pennsylvania, 8,450; Maryland, 6,123; California, 5,668; and Texas, 1,576.

There are said to be 100,000 German inhabitants in the city of New-York. They have upwards of twenty places of public worship, upwards of fifty schools, ten book stores, and five printing establishments; and a German theatre.

## Simple Cure for Dysentery.

An old friend handed us the following simple recipe for publication. It has been practiced in his family for many years, with uniform success, even in the most alarming stages of the complaint: Take Indian corn, roasted and ground in the manner of coffee, (or coarse meal browned,) and boiled in sufficient quantity of water to produce a strong liquid like coffee, and drink a tea cup full, warm, two or three times a day. One day's practice, it is said, will ordinarily effect a cure.—*Middleton Republican.*

Not a bad medicine to take. Safer, in a bad case, to call a physician.—Ed.

## Some Truth.

In the museum, at Hifalutin, is a flea skin containing seven misers' souls, seven rich men's consciences, the "principles" of seven leading politicians, seventeen old bachelors' hearts, and the remaining sweetness of seventy old maids.

All right but the last. A woman's not being married is not always evidence of the want of a large soul. The patient toil, the self-sacrificing spirit, the modest worth of many an old maid, are among the brightest things of earth. Many a man has been great and good, a blessing and an honor to his race, who would have been a loss, or a curse to the world, but for the self-sacrificing affection of a maiden sister, or a maiden aunt. Leave off this indiscriminate laughing at old maids. It's a shame.—Ed.

## Agricultural College.

The State of Michigan has established a College of Agriculture, on a farm of seven hundred fertile acres, near the city of Lansing, where the state capital is located, Joseph R. Williams, late editor of the *Toledo Blade*, is President. It has now an endowment of fifty-six thousand dollars, the proceeds of the Salt Spring given to Michigan Territory by the federal government. The legislature has appropriated twenty thousand dollars per annum for two years to the support of the College. There are already accommodations for eighty students. No charge is now made for tuition, but each student is required to work three hours per day, for which he is paid.

## Costly Bridges.

The suspension bridge about to be erected over the Mississippi, at St. Louis, will, it is said, cost about two millions of dollars; it will be about eighty feet above high water, and over a mile in length, and the bottom of the towers will be sixty feet below water. It has been stated that this structure will be the most costly of any of its kind in the world. There are, however, many bridges in the world which have cost more money than will that of St. Louis. Three of those crossing the Thames at London, cost—the London bridge, ten millions of dollars; the Southwark, eight millions; and the Waterloo, five millions. The celebrated tunnel under the Thames, at London, cost over three millions of dollars.

INFIDELS often grumble about the cost of preachers, who, by the by, are the poorest paid set of men in the United States, as a whole, with here and there an exception; and who, in order to live, must have donation parties, as though they were paupers, because they were preachers of eternal realities. The cost of all the clergy in the United States is but $12,000,000 annually, while the criminals cost $40,000,000, the lawyers $76,000,000, and intoxicating liquors $200,000,000.

IF the talent of ridicule were employed to laugh men out of vice and folly, it might be of some use to this world; but instead of this we find that it is generally made use of to laugh men out of virtue and good sense, by attacking everything that is solemn and serious, decent and praiseworthy, in human life.

## Protection to Game.

THE Legislature of Ohio has passed a law for the protection of the birds, &c., which makes it a fineable offence to any one to kill a rabbit, deer, or any of the feathered tribe mentioned, between the 1st of February and the 15th of September, or to kill a blue-bird, mocking bird, red-bird, or any other singers at *any time.*

Children (especially grown up children) should seek pleasure in almost anything rather than in destroying birds. Birds are of enormous value to a country by destroying insects hurtful to fruits and other crops. There is little danger of having too many birds; and it is a great pity that one should be destroyed wantonly.—ED.

## The Future.

THE fate of this country depends on nothing so much as on the growth or decline of the great idea what lies at the foundation of all our institutions—the idea of the sacredness of every man's right, the respect due to every human being. This exists among us. It is now to stamp itself on manners and common life—a far harder work. It will then create a society such as men have not anticipated, but which is not to be despaired of, if Christianity be divine, or if the highest aspirations of the soul be true.—*Channing.*

## A Sensible Doctor.

A HANDSOME widow applied to a physician to relieve her of three distressing complaints, with which she was afflicted.

"In the first place," said she, "I have little or no appetite. What would be best for that?"

"For that, madam, you should take air and exercise."

"And, doctor, I am quite fidgety at night and am afraid to sleep alone. What shall I do for that?"

"For that madam, I can only recommend that you take—a—husband!"

"Fie! doctor. But I have the blues terribly. What shall I do for that?"

"For that, madam, you should, besides taking air, exercise, and a husband, take a newspaper."

Sensible Doctor, that.

## A Hint for the Season.

THE simplest and best way of preserving woolens through the summer from the destruction of the moths is to wrap them well up, after brushing and beating them, in cotton or linen cloths. The moths can pass neither. Two covers well wrapped around, and secured from the air will be effectual. An old sheet will answer and save all expense of camphor, etc.

## Fanning Mills.

IN calling attention to the advertisement of R. M. Welles, of Athens, Bedford Co., Pa., we will only say, that we have recently visited his establishment, and we judge from the general good order prevailing, from the intelligence of the men employed, and from the appearance of the work, that the public may rely upon Mr. Welles for a good article in his line.

# Children's Page.

## Sowing and Reaping, or Work for all Seasons.

Never stand still, brave youth or fair maiden, with hands folded and eyes half shut, upon the supposition that you have nothing to do in making the world's machinery go with less creaking and jarring. Neither adopt the other extreme, and because you are of somewhat an ambitious and active temperament, fancy you can manage the whole affair yourself, and like Atlas carry the globe on your shoulders.

We have each and all of us something to do, but it can be done without much noise or trouble, if we only think so. Our words, actions, our every look, tone, smile, or frown, are exerting an influence upon those around us, and the sum of happiness they enjoy increased or diminished by us. Smiles which cost us nothing, but which, rightly bestowed, may enliven a whole day, we must not grudge, and kind words and gentle tones we can surely afford to the friend at our fireside or the beggar at our gate.

There is no neutral stand for us to take. We are positively good or bad. While we profess to love our fellow-creatures, we are acting the part of a hypocrite if we do not manifest that love by sympathy in their troubles and joy in their prosperity.

There are persons whose presence in a room is like "the sunbeam in a wintry day," making all hearts feel better and happier; "in the clear heaven of whose unclouded eyes an angel-guard of loves and graces lie."

"They are sowing the seed of word and deed,
Which the cold know not, nor the careless heed,
Of the gentle word and the kindly deed,
Which have blessed the heart in its sorest need,
Sweet shall the harvest be."

There are others whose repelling, forbidding faces are like the door of a tomb on which is written, "Wit, and grace, and all that is lovely, lie buried here." Their hollow, grating voices give one a feeling of chilliness and gloom, and every narrow expression of their dwarfed and barren minds causes us to shrink from contact with such poor, suspicious, perverted natures. Sowing in young minds seeds of discord and misery, of wrath and bitterness—holding the wine cup to the lips of the inexperienced and careless—tempting with gold the poor and needy—enticing them to the haunts of the gambler—instructing them in villainy—luring with honeyed words the young and innocent to the very lowest depths of moral, mental, and physical pollution—these agents of the powers of darkness are ever busily at work.

"Daily sowing the seed of pain,
Of late remorse and a maddened brain;
And the stars shall fail, and the sun shall wane
Ere they root the weeds from the soil again;
Dark will the harvest be."

Dwellers in peaceful happy homes, young men and maidens, the pride of your parents and the future hope of your country, there is work enough for you all. Without any clamoring or struggling for official stations on the one side, or stepping aside from the sacred ministries of home in a contest for "woman's rights" on the other, you can help to accomplish what legislation never yet effected—the moral regeneration and redemption of fallen humanity.—*Annie Lee in Life Illust.*

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"Mr. Green, when you said there was too much American eagle in the speaker's discourse, did you mean that it was a talon-ted production; and to what claws of the speech did you especially refer?"

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What a world of gossip would be prevented if it was only remembered that a person who tells you of the faults of others, intends to tell others of your faults.

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The "eye of the law" has become so weak from the want of proper practice in the different courts, that it is going to advertise for a pupil

# Book Notices, etc.

THE CONGREGATIONAL HYMN BOOK, for the Service of the Sanctuary. Boston; John P. Jewett & Co. 1857. 752 pages.

This manual is executed on beautiful paper, and the hymns, 1081 in number, printed in a new and elegant type, are choice, evangelical, and admirably arranged by topics. The work does honor to editor and publishers.

THE COTTON PLANTER; Montgomery, Ala. N. B. CLOUD, M.D. Agricultural Ed.; CHAS. A. PEABODY, Horticultural Ed.

This monthly reaches us in a style and dress which clearly indicates either that the publishers are "casting bread upon the water" with the belief that it will sooner or later come back to them, or that the farmers of those regions are already giving it a generous support. The latter we hope. The July No. is peculiarly rich; and is faultless in its style of execution.

SOUTHERN PLANTER; F. G. RUFFIN, Ed. Ruffin & August, Proprietors.

The July No. of this monthly comes to us replete with matters of the highest interest to the cultivators of the soil. If Virginia farmers comprehend their true interests, they will give it a liberal support.

THE NORWICH AND WORCESTER route to Boston has many attractions. It has fine boats, well officered, and its train of cars from Norwich, arrive in Boston in the morning in season for trains going East.

## United States and State Fairs for 1857.

FAIR of the United States Agricultural Society, Hon. Marshall P. Wilder, President, will be held at Louisville, Ky., September 1—4.

Annual Exhibition of the American Institute, in the Crystal Palace, New-York, opens September 15. (Goods received now.)

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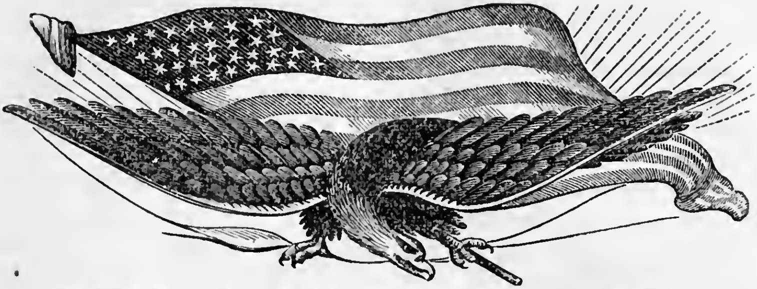
| Ohio | Cincinnati | September 14—18. |
| Canada East | Montreal | September 16—18. |
| Illinois | Peoria | September 21—26. |
| Pennsylvania | | Sep. 29, to Oct. 2. |
| Vermont | Montpelier | Sep. 30, to Oct. 2. |
| Wisconsin | Janesville | Sep. 29, to Oct. 2. |
| Michigan | Detroit | Sep. 29, to Oct. 2. |
| New-Jersey | New-Brunswick | Sep. 29, to Oct. 2. |
| Maine | Bangor | Sep. 29, to Oct. 1. |
| California | Stockton | Sep. 29, to Oct. 2. |
| Canada West | Brantford | Sep. 29. to Oct, 2. |
| United States | Louisville, Ky. | October 1—6. |
| Indiana | Indianapolis | October 4—10. |
| New-York | Buffalo | October 6—9. |
| Iowa | Muscatine | October 6—9. |
| New-Hampshire | Concord | October 7—9. |
| Kentucky | Henderson | October 13—16. |
| Connecticut | Bridgeport | October 13—16. |
| East Tennessee | Knoxville | October 20—23. |
| Massachusetts | Boston | October 21—24. |
| Maryland | Baltimore | October 21—25. |
| West Tennessee | Jackson | October 27—30. |
| Virginia | | October 28—31. |
| Tennesse | Nashville | October 12—17. |
| Alabama | Montgomery | October 27—30. |



# AMERICAN FARMERS' MAGAZINE.

Vol. X. SEPTEMBER, 1857. No. 3.

## Hints for the Season.

Between the summer and the fall harvest is an interval favorable to general and permanent improvements on the farm.

The gathering of materials for composting and increasing the manure, is among the most important. Abundance of these from the swamp, from the borders of the woodland where leaves have drifted for years, from old hedges which you are about to clear up, or wherever you can get them most economically, should be scattered about the barn-yard, and a portion of them packed away in the barn, where they can be found for bedding in winter.

It is not of very much consequence what they are, any thing that will absorb the urine and retain it for the next year's crops. This is the farmer's guano, and he should save it. Fifteen dollars worth of labor, applied to saving and applying the urine of the farm, is worth more than any ton of guano ever brought around Cape Horn. Brakes mowed in the pasture, salt hay, leaves, dry muck, road scrapings, mold from old hedges, almost any thing will answer the purpose of an absorbent.

Wheat straw, oat straw, rye straw, pea vines, salt hay, if of a tolerable quality, and even the poor hay cut in pastures after the meadow haying is over, half brakes and weeds, are too good to be used for this purpose. These should be run through the hay cutter and fed to animals, when stock of all kinds and meats for the markets are as high as at present. Put on the corn meal and make these a help to the growing and fattening of stock; or if you have root crops, as most farmers in our country ought to have to a limited extent, these being of a succulent, juicy nature, will help to a consumption of the straw and inferior hay; and the farmer is not true to his own interest who does not make his straw and coarse hay tell favorably towards the feeding of stock; for although these are not sufficiently nourishing when given alone, yet as a material for filling up with more nutritious food, they are worth too much to be thrown under foot. They should be turned into manure for the next year's crop, not by being thrown out as bedding, but by being passed through the digestion canal of animals.

If you dry swamp muck for an absorbent in winter, remember what we said in a former number about freeing it from hurtful acids, by exposure to sun and rains, and by occasionally turning over with the plough. It should not lie in high piles. All the sun and air it gets makes it the better. It is better therefore to dump it a single load in a place than to put it into large heaps; and if the loads are dropped along in a line, one after another, it is no great trouble to turn it over now and then with the plough. Farm engineering—what is it? Not a contrivance to get rid of work, but an application of common sense to make every stroke of labor tell to the best advantage; as, for instance, it is much easier to turn over a hundred tons of swamp muck with a plough if laid in a long line, than to fork it over if laid in a large pile. If you have more of this muck than you care for in the yard and the stables, look into one of our back numbers and see how, by the addition of a little quick lime, and by throwing it into large heaps just before winter, (the larger the better,) you may have it fermenting during the coldest weather, and ready to act an effective part in starting and carrying through the next year's crop, a richer fertilizer (in proportion to the cost) than any manure you can buy for sixty or seventy dollars a ton.

That there may be no mistake in our reference to a past number, and that our new subscribers, fast becoming a majority of the whole, may have the benefit, we will repeat in our next article one mode (tried over and over again, and thoroughly proved to be good) for dealing with swamp muck to prepare it for a next year's crop.

But there are other things to be done between summer and fall harvest. That wall that you have been contemplating to put up along the road these ten years—is it done yet? If not, can you be doing it now? Perhaps you say the corn is growing on the very ground from which the stones are to come. Well then, you must let it rest awhile longer. But can you not remove the old fence a little inside of where it now stands, and plough down and excavate with the spade and then fill up with small stones, and thus prepare a foundation for the wall, so as to be ready to build as soon as the corn crop is off? Remember that if you excavate, and lay the foundation of your stone wall two feet under ground, every foot of land within twenty feet of that wall will produce more ever afterwards. And remember too, that if you do up now all that can now be done to advantage, you will not be so hardly pressed with work by and by, after the fall harvest comes on. One grand secret of American farming, is to equalize the work for the whole year, so as not to be out of work at one time and at another to have more than you can possibly do. A farmer of the right stripe never is out of work, and seldom has more than he can do. One of the wrong stripe, is often out of work, and very often unable to keep up with his work.

How is it with the public way through your farm or along side of it? you own perhaps, a quarter of a mile on both sides of the way, or it may be half a mile or more on one side. Is there a beautiful row of trees, maples, elms, apple trees, anything that will afford beauty and comfort to you and the passing stranger? Is the ground smoothed, made decent, safe, such as to indicate that a man of sense and public spirit lives in that house of yours, or is all as some slouchy surveyor of roads lift it, rough, shadeless, just as the King's—no, a republican—highway should not be? Just answer this question honestly, and if the highway through your premises presents a beautiful lawn, no Canada thistles, no rampart weeds, shades in plenty, fruit, if the soil permits, all right, a beautiful lawn each side of the drive, tasteful, safe, such that a carriage would hardly be upset, if the horses should run away, then we praise you; we say you are a good fellow so far; but if all is wrong, homely, ugly, deformed, no shades, nothing neat and safe, then we are down upon you; we say you are lacking in self respect. Why should the passer-by be compelled to say "a sloven lives there." You are devoid of public spirit. If you will not make the borders of the highway through your farm neater than some tasteless, slovenly surveyor of roads leaves them, you ought not to have a farm. Shame on a rude, stumpy, weedy, pest-producing way past a farmer's house! It ought never to be.

How is your farm laid out? Are the fences crooked, where the nature of the soils would just as well admit of their being straight? Are your lots of such shape as to escape conviction under the second commandment, because not of the shape of anything else in heaven or on earth or under the earth? Are they so small as to make the expense of even a poor fence around them enough to eat up all the profit of the crops? The cutting of a farm into mince meat, having more fences than you can possibly afford to keep in good repair, devoting one-fourth of the whole land to broken fences and filthy hedge rows, a gathering place for mice, weeds, briars and all unclean things, is a miserable policy. A well laid out, well fenced, and well cultivated farm, is the most beautiful object in nature. The eye of taste and sound judgment sees there the beauty of nature, and the beauty of utility, and is satisfied. If your farm is not laid out as taste and convenience, and economy in the matter of fencing requires, September is a good month in which to commence a reform, to be carried on next spring, and completed in future years.—Ed.

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## Swamp Muck---Indian Corn.

*Swamp Muck—How to get it out and apply it without too much labor. Indian Corn—How to grow it with composted muck.*

After it has been thrown up a few days, exposed to the sun and drained, carry it to the barn-yard, strew it over the whole yard, and at some convenient time when there has been no rain for a long time, pack away a portion of it for an absorbent in the stalls for winter's use. Every farmer who has this material on his farm, as most have, can make use of a considerable quantity in this way to great advantage, and it will increase the value of the next spring's manure much more than the cost of the labor.

But when you have enough out for the yard and stalls, or if it is distant from the barn, and not far from the fields where you will use it, so that it would be bad policy to haul it all the way to the barn and back again, then dump it on a level or gently sloping piece of ground, a cart load in a place, in a long line, and occasionally run the plough through it from the time you get it out, say in August or September, till nearly winter, that the whole may be washed and sunned. This is to remove the sourness. Then, just before winter sets in, mix a bushel or two of lime (one bushel if lime is high where you live, two if it is cheap) to each load of muck, and throw it (with the scraper will be the most economical way) into a very large, or as the case may be, into several large heaps, the larger the better, provided the labor be not thereby too much increased, and let it lie thus till spring.

The effect of the lime is to neutralize any remaining sourness and to create a fermentation in the mass, keeping it warm through the coldest winter. On any gravelly, sandy, or loamy land, or even on clayey soil, if nearly destitute of organic matter, this can hardly be applied amiss, whether as a top-dressing or to be plowed in. It should never be applied to peaty soil, not but that it would benefit such, when prepared with lime as we have described, but it would be of more value for other soils.

The best use we have ever observed for this compost, is to put with each load a load of barn manure, a bushel of ashes, half a bushel of salt, and a peck of plaster, and when the whole has come into a tolerably active fermentation, to plough in ten loads to the acre on the corn field, and put ten more in the hill, and to drop and cover the corn as fast as the application is made, so that the heat of the compost will hasten the germination of the seed.

This mode of growing corn has been long practiced in some parts of our country, and with signal success. We will not say that such a compost is as good as Peruvian guano. That would be extravagant; for we believe it is now a settled point that Peruvian guano is the best fertilizer, ton per ton, in the world. We are as loud in our praises of it as we are obstinate in our opinion, that the great mass of American farmers *can not*, for the ordinary purposes of farming, *afford to purchase it at present prices.*

No, no; the compost we direct for preparing is not as good, ton per ton, as Peruvian guano, not half as good, not a quarter; and yet the farmer can afford to use it, because if he has the material at hand, as most farmers have, he can get a whacking profit on the labor of preparing it. This swamp muck is more valuable than most farmers are willing to admit. Its composition is much the same as that of cow-dung, with the exception of a few salts which have been washed out and must be restored in the process of composting; and with one other exception, which is, that in most cases it has accumulated certain acids of a hurtful nature.

In other words, it is the same as cow-dung, with a few valuable salts taken out and some hurtful acids added. It should not be used in this state. Those who so use it always give a bad account of it. The plan we propose—a plan that has been tried out and out, no mere theory—provides for disposing of the acids and for restoring the salts. The autumn suns and rains will take away the acidity mostly. The lime, with which it lies in compost over winter, will neutralize the remaining acidity and bring it into a slow fermentation. The barn manure, ashes, plaster and salt, proposed to be added in the spring, will supply the lost salts and bring the whole into an active fermentation.

The cost of manuring Indian corn with twenty loads to the acre of this compost, say ten or twelve loads to be plowed in, or harrowed in near the surface, if the soil is at all heavy, and eight or ten loads in the hill, applied hot from the heap, and the corn covered immediately, is not a very expensive dressing. It insures a good crop—forty to eighty bushels shelled corn to the acre, according to the quality of the land, with good cultivation—and it leaves the land in excellent condition for after crops.

Who, that has not before, will try it? Remember to get out the muck early this fall; drop it not more than a foot in thickness, that it may feel the sun and rains; stir it occasionally with the plough, that the whole may be sunned and aired; add the lime late, just before winter sets in; the other ingredients should be added early in the spring, that the whole may have time to come into a pretty smart fermentation at the time for using it. For starting the crop, which is always an important matter with corn, much depends upon its being applied in a fermenting state.

If the manure you add in the spring is of a fair quality, having a due share of urine, there will be no difficulty about the fermentation coming on in time. Should it fail however to ferment, it will be easy to bring on a fermentation by applying to the heap a load or two of fermenting horse-manure, which will act as a yeast, and send the fermentation through the mass.—Ed.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Osage Orange.

Messrs. Editors:—Questions like the following are often asked: "Will it not winter-*kill* in this Northern climate, it being a Southern plant?" On page 171 of the previous volume of *The Plough, the Loom, and the Anvil*, I gave my experience in raising the plant from the seed; and another hard winter has proved to me that they will stand this climate, and not winter-kill but very little, if rightly managed. A more severe winter was never known in these parts than the last. No winter has ever hurt fruit trees worse. My osage plants "came out safe and sound." It is my opinion that this plant will become acclimated, and be the adopted fence of this prairie country. One way to protect it from the frost is, to cover it over with straw or something else that will protect it from the wind, and cause the snow to drift upon it, while it is young. After it gets to be three or four years of age, if the frost does kill the tops down, it makes it all the better for a fence. Last season being very dry in the fore-part, I had my hedge cut, and kept it clean from weeds until harvest and the busy season of haying came on, and several heavy showers of rain started the weeds. My being busy at cutting hay, I did not hoe them out and keep them from growing, as a tidy farmer ought to, but let them grow until the frosts killed them forever.

When cold winter made his appearance, accompanied with tingling frost and snow, searching winds, that meddled with every one's business out of doors, and very often in the house, especially where the cracks between the logs were open, and took great pains to take the snow from the field and prairie and pile it upon heaps behind fences, etc., then the weeds that I neglected to cut out of my fence came into good "play." Here it was that the snow had been piled nearly to the top, and the result was that they did not kill down but a few inches. This no doubt saved them in a great degree from being killed down much lower. Those that did not have the "luck" to stand where the snow drifted upon them, were killed within twelve inches of the ground, the stem being some two feet high. After the stalk becomes old, I do not think the frost will injure it for a fence.

In a letter published in the *North-Western Christian Advocate*, by Wm. G. Nevitt, he says, speaking of the osage orange: "After about four years experience in trying to make a fence of it, I believe I shall succeed very well, when I have a good board fence outside and an old rail fence inside. In this way it will be preserved in winter from the frost by filling up with snow, and from stalk in the summer; but when it is left by itself it will winter-kill sufficient to spoil it for a fence, on most of our prairie lands." I can not agree with Mr. Nevitt, although experience may compel me to do so. I have seen hedges at five, and even at four years of age, that cattle could not break through nor over it, in this State, and I think the winters are as severe here as in White-side county, Ill. A portion of my hedge lay exposed to the N. W. winds all winter, and they have come out "right side up" this spring.

"Nothing ventured, nothing have," is an old proverb, and I have commenced with the seed two years ago last spring, and I intend to carry it through and see what it will do. If it will not do for a fence, then we farmers of the prairie must do something else in regard to fencing our farms, for our small piece of timber will soon be gone, and if the osage hedge will not stand the winters, then we shall have to get up some other Yankee invention. Something certainly will have to be done not only upon the prairies but in the old settled timbered States.

Osage hedge may want, and must, like everything else, have care. No farmer expects to raise a crop of corn without tending it. He ploughs and hoes it; he must do the same with his hedge; he must cultivate it and keep it trimmed down, so that it will thicken up at the bottom. Unless he does this, he can not expect to have a living fence.

Messrs. Editors, neither you nor your correspondents have ever said much upon the subject of fencing. Why is this? Are your correspondents asleep upon this important subject? a subject that costs the farming community millions of dollars annually. Rails and boards will soon become extinct in fences.

I hope that the correspondents of *The Plough, Loom, and Anvil*, will speak out upon this subject, the editors not excused. Our country, both east and west, and all of Uncle Sam's dominions, will soon see the want of something to fence with besides boards and rails. Unless something is used for a substitute we shall have to return back to the days of the patriarchs for an example.

Lynn, Warren Co., Iowa. L. S. Spencer.

*Remarks.*—This subject is important, though perhaps not quite as pressing as the writer seems to think. Our country is large, and it will produce not only rich harvests, but timber for fencing them with. From a quarter to a third of every country should be timbered. It should be so on the prairies; and if the occupants of these vast regions understand their true interest and comfort, they will make haste to break the prairie winds with trees, in clumps and groves and small forests; several farmers, in many cases, uniting to extend these wind-breaks continuously past their premises. Almost any country, if rightly managed, will grow timber enough for shelter, and for purposes of fuel, fencing and building.

The subject of hedging, however, is one of great interest. A live fence is better in some respects than any other. It breaks the wind better; is not liable to be blown down; gives beauty to a region; and above all, affords a covert to birds, which, we begin to think, are the only power that can war successfully upon insects destructive to the products of husbandry. We really hope that the osage orange will bear our Northern winters, but do not think that point yet fully settled.

In some parts of our country fences are beginning to be dispensed with. This practice, in connection with soiling, may be extended; but we see not how it can become general; and we quite agree with the writer of the foregoing that it is important to experiment, and to be ascertaining, as fast as may be, what shrub is best adapted to the construction of living fences in our various latitudes. The writer of the above has our thanks for his experience, though it does not seem to us very decisive; and if others will give us the merits and the deficiences of the hawthorn, buckthorn and other plants that have been used or recommended for hedging, our pages shall be open to their contributions.

## What a Woman Thinks about Farming and Farmers.

A LADY writer at the close of a very womanly and very sensible communication, not designed, we suppose, for the public eye, thus gives vent to her admiration for the farmer's calling:

"Your journal has much improved in its style, composition and subject matter. Even the children now, have a little corner. Though I may not raise corn, yet I like to read how others raise it. If I had the means, I would be a great farmer though I am but a woman. It is the noblest pursuit of earth, one that leaves no sting after its accomplishment, but on the contrary gains a contented, cheerful spirit, and brings with, not overwearied limb and brain, the sweetest sleep, and a calm conscience. A man can not be bad-hearted who is a steady, untiring farmer. How can a man's heart be anything but fresh and green when he works in nature's wide domain with the blue sky over him? He *must* be good, in spite of himself, whether he will or no. Give me a farmer before other men. But I am tiring your patience. Please excuse me;—you know I am a woman and I *must* talk."

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## Seed Wheat---Mixing of Varieties.

As the season for putting in the wheat crop is near, farmers would do well to consider the importance of sowing only the best seed. They have been too much in the habit of threshing out a few shocks for sowing, without much consideration of the soil on which it grew, and without sufficient care to cleanse it perfectly of smut and of such foreign seeds as might injure the crop, as if they would say, "Wheat is wheat, the world round, and if we sow wheat we shall get wheat."

We see it stated in the agricultural journals of some of our great wheat-growing States, that great advantage is derived from the exchanging of seed. It is recommended not to bring seed from a widely different climate, but to select with regard to variety of soils—to sow clay lands with seed from loamy soils, and the reverse. There may be something in this. We presume there is, or it would not come recommended from so high authorities as it does, as from the *Michigan Farmer*, for instance. Still we should look more at the perfection of the crop out of which the seed is taken, than at the character of the soil.

Suppose we had harvested but a small crop the past year, and that not of the best quality, and that a neighbor, no matter whether very near or not, for good seed is worth going after a considerable distance, had harvested a very perfect crop, say 40 bushels to the acre, clean, not a particle of smut, no cockle, nothing but the unmingled gift of Ceres, and suppose he would sell it for a trifle more than the average price of wheat at the time, we would sow that seed in preference to our own, provided the variety were one we approved; and then we would cultivate with the same nicety and care that our neighbor had.

A new thought, at least new to us, about wheat. M. Lucien Rousseau, of Angerville, France, has broached the idea, or rather has stumbled on it by accident, that the mixing of varieties of seed is favorable to the wheat crop. In 1855, he experimented upon fifteen varieties of wheat, sowing each by itself, and noting the results, both in weight of wheat and of straw. The disparity, on the same land and with the same cultivation, was remarkable. But what was more remarkable, and the only point to which we wish to call attention, was that after sowing the fifteen varieties, a little seed of each remained. These fifteen parcels he mixed together and sowed on a separate patch, and although the land was no better, was more shaded, and no better cultivated, the crop far surpassed either of the plots sown with a single variety.

M. Rousseau's reasons, which we copy below from the *Michigan Farmer*, appears hardly satisfactory to us, and yet there may be something in them. At any rate we would recommend a trial of the same experiment. It would be but little trouble to sow a field with five or six of the varieties accounted best for that region, keeping each variety separate, and then sow another part of the same field with a mixture of all, and note the results. The farmer who would make the trial for himself would have the advantage of knowing whether there is utility in the new idea, or whether it is to be ranked with the thousand and one humbugs of the day. M. Rousseau's reasons are as follows:

1. The several varieties do not head out at the same time, and therefore the period of flowering is lengthened, and the chances of fertilization are thus increased.
2. The several varieties are unequal in height, some being shorter than others at the time when the plants flower; the heads therefore are not so close, are more exposed to the air, and the floration is likely to be more perfect, and the fertilization more general. This theory seems to be confirmed by the fact that where wheat plants are most exposed, or are a little thin, other circumstances being equal, the fertilization is more general over the whole head, than where the wheat is thick.
3. The crop seems to ripen better from the same cause, namely, the inequality in the height of the varieties, and in proof of this it has been remarked that in mixtures of wheat and rye, often sown in Europe, and of barley and spring wheat, the grain is finer than that of the same grains grown separately, and under the same conditions. This is considered to arise from the more complete aeration afforded by the two kinds of plants, one of which grows high and leaves room for the sun and atmosphere to ripen the whole more perfectly, than when the surface is composed of one unbroken mass of heads of grain which shut out the light from the leaves and stems, and thus ripens one part of the plant before the other is matured.
4. Another advantage claimed by this mixture of seed, is that the crop does not depend altogether upon one variety, which of itself may be unsuitable for the soil where it is sown. The strong and healthy varieties will always fill up the spaces left by the decay of the more delicate or tender kinds, and thus in some degree be more likely to insure a crop.

We have often noticed that a kernel of wheat in a rye field tillers wonderfully and produces remarkably well. Is it possible that the different kinds of wheat will produce a like effect on each other?—Ed.

## Many Things in Little Space.

A FRIEND of ours tells us that, not long since, his garden and orchard became infested with myriads of worms, (does not know the name,) and they increased to such a degree that it seemed as if every green thing would be devoured. There came along a flock of cherry birds, which gorged themselves on the worms, and when hungry returned again to the attack, till in three or four days not a worm remained. We know not what kind of worms these could have been, nor did we know that cherry birds devoured worms of any kind. But of one thing we have no doubt,—that our friend's premises were sadly infested with some sort of worms, and that some kind of birds, which he called cherry birds, did him a capital job in clearing them off. In a recent trip of 1000 miles, out and back, we have scarcely stopped at a public house where there were not two or three things in the shape of men, with double-barreled guns, talking over their grog of their exploits in shooting birds, not those desired for food, not because they had done mischief, but simply for the pleasure of killing them. Pleasure! What pleasure can there be in killing an innocent bird and leaving its young to perish for want of a mother's care? Shame! shame! It is not Gothic; it is not Vandal; it is not barbarian! The insinuation would be a slander upon Goths, and Vandals, and barbarians. It is simply American. City gents lead off and country boys follow, and whole regions are being desolated of their rightful tenants. Song and beauty and the poetry of motion ceases from the grove. Insect life will of course become rampant. Again, we say, shame!

We see that a writer in the *Ohio Cultivator* recommends the planting of wormwood about the roots of trees to keep off the borer. He says that the wormwood operates as a mulching to the roots, securing them against injury from drouth, and that its odor prevents the deposit of the eggs which produce the borer. It may be so.

We have from our correspondents not a few accounts like the following: "The span-worm has lately made its appearance in Meigs county, (Ohio.) In May it completely destroyed the leaves and left the trees destitute of their foliage, with the appearance of having been scorched by fire." Whether the span-worm of our correspondent is the canker-worm that is doing so much mischief in the Eastern States, is more than we know. The effects of his ravages are similar. Nor do we know whether the cherishing of birds by all possible means, such as surrounding our buildings with trees, planting hedges for fence where we can do it with tolerable economy, leaving them to enjoy life, instead of shooting them in *cold-blooded* fun, would cure all the ills flesh is heir to from insects; but we are strongly inclined to think that Divine Providence has set one thing over against another, as the birds against the insects, so that the former are to feed mainly upon the latter, and the latter to be thereby kept within bounds. Man can not destroy insects. Birds can. Two hundred of the wheat-fly were found in the maw of a wren. Supposing one-half of these two hundred flies to have been females, and that each would have deposited in the heads of wheat one hundred eggs, then 10,000 enemies of the wheat crop were prevented from having a being in one morning by a single wren, and this, looking only at her own food. But who knows but that she had two young, and that she gave them an equal number. Thirty thousand enemies, in that case, were cut short of a being; and if thirty thousand in a morning, then perhaps a hundred thousand in a day; a million in ten days; and if a million by one bird, then how many by all the birds on a farm, from which the monsters, with double shooters, are excluded? Enough, it may be, to essentially diminish the ravages of the weevil for the present and hasten its extermination by many years.

The *Western Farm Journal* says that, in agriculture, "there is no capital so essential as intelligence, and that a dollar's worth of this kind of capital will return a hundred fold in corn and cattle." True, every word.

Mr. Robert Leevers, of Iowa, publishes that on a patch, 59 feet by 14, (less than three rods,) he has gathered this year four bushels and three pecks of strawberries, equal to 232 bushels to the acre. McAvoy's Superior was the kind. This is a great story, but not too great to be true. We have seen crops this season that could not fall much short of this.

We understand that Baldwin, De Witt & Co., of Cleveland, Ohio, have turned out 900 of Manney's reapers and mowers this year, and yet have not supplied the demand. John S. Wright, of Chicago, told us last fall that he expected to manufacture 5000 of these machines in that city, and 3000 in Dayton, Ohio, in one year. These establishments are but two out of many. A great country.

Lysander Pelton, of Gustavus, Ohio, purchases the curd of his neighbors, and will make, it is said, 250 tons of cheese this year. A considerable business this. 250 tons is 500,000 lbs. This at 10 cents a pound would come to $50,000. As the prices of meats and dairy products have been for several years past, it would be hard to see why grass farms will not pay.

At a recent discussion by the American Pomological Society, it seemed to be agreed on all hands that the Roxbury Russet is an excellent fruit for nearly all parts of the country, more a national apple than any other, except that Mr. Ernst, of Cincinnati, had found it to vary much in quality on different soils, succeeding well on alluvial, but not as well on clay soils; and it was stated not to be doing as well in some parts of Ohio as formerly. The Baldwin, so valuable in the Eastern States, is not sufficiently hardy for the West. Most of the trees in Iowa and Northern Illinois, which were reported well of a few years since, are dead by the severe winters. Possibly this may be from growing too rapidly on an over fertile soil.

The committees on reapers and mowers at the late trial in Syracuse, we understand, are not to report till after the national fair at Louisville, Ky.

While we write these items, the temperature is but little below the scalding point. Perspiration flows, but not ideas. Our clothes stick to us. Why may not gentlemen wear hoops also?—Ed.

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## Smut on Wheat.

Smut seems to be a parasitic fungus, of which there are several varieties, as on Indian corn, wheat, etc. The black dust of matured smut is to be regarded as its seeds, each particle of which, however light and evanescent, is capable of germinating and producing its kind when brought into favorable circumstances. It is difficult to say precisely how these seeds find their way into the receptacles of growing wheat. But it is probable that they adhere to the kernals of wheat when sown; and we know that in some way they are carried upward with the growing plant; and are developed at the base of the newly forming kernels, simultaneously with the bursting of the spike from its sheath, or perhaps a little before the head makes its appearance. From this time the fungus grows and develops itself more or less rapidly, as the weather favors or otherwise, drawing its nutriment from the plant, thus partially depriving the forming wheat of its appropriate food, as well as insinuating a hurtful ingredient.

Now, on the supposition that the smut in wheat comes from sporules (smut seeds) distributed with the seed wheat, which we suppose to be correct, it follows, that if you could wash the seed before sowing, perfectly clean, there would be no smut in the crop, for however warm, damp and lowery the season, smut will not grow, unless there is seed for it to grow from. But it is impossible to secure perfect cleanliness from these sporules or smut seeds. They are too minute to be all washed away; and their vitality is not destroyed by pure water. Hence the importance of washing seed wheat in some solution that will destroy the vitality of such of the sporules as fail to be washed out.

Salt, plaster, quick-lime, arsenic, sulphate of copper and other things have been recommended. The first is always at hand, and the next two are seldom far absent from the farm; and we believe that these are sufficient. If the seed be first washed in pure water, then in a weak brine, of say one quart of salt to a pail full of water, and then dried in plaster or quick lime, (the latter not to be used too fresh nor very freely, lest it injure the vitality of the wheat,) we think that there will be little danger from smut, and that the operation will be favorable rather than otherwise to the germination and early growth of the seed wheat.—Ed.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Extracts from the Journal of a Tennessee Farmer.

*July* 20, 1857.—I have just finished cutting and shocking the wheat crop, which, by reference to former leaves of this journal, has been done about eighteen days later than usual. Last September, about the 20th, I sowed sixty acres of bottom land in white blue stem, which I will call field No. 1. This was a field which had lain in clover three years, the crop of mat and seed was turned under in August at a depth of say five inches, and one and a half bushels of seed wheat was put down to the acre.

Field No. 2, of twenty-five acres, was sowed October 1st, on oats stubble land turned in the same way, and with one and three fourths bushels *Quaker* to the acre. Both fields were harrowed in. So far as I am now able to correctly guess, the yield to the acre of field No. 1 over that of field No. 2, will be as 24 to 15. The past winter was long, cold and dry. The same sort of weather, though milder of course, characterized the spring, and indeed up to the date comparatively. This I think may account for the late harvest.

Our farmers in East Tennessee, generally, have gathered this year one of the very best (in all respects) crops of wheat ever harvested here in the memory of man. Last year this (Hawkins) county sold to foreign markets about 50,000 bushels. Twice that amount can be doubtless spared this year. The crop of last year was good, the market fair, and transport easy. But the corn crop was short, which made the home consumption of wheat greater than usual, because horses, cows and hogs were fed upon this grain for several of the last months, there being no corn at all. Now we are promised a bountiful crop of the latter grain, though *it* is some four weeks later than formerly, just now exhibiting the tassel. On a former leaf it may be seen that "July 19th, 1854, we had full grown roasting ears in the field." In this year's crop of wheat I am thankful that I am able to record truthfully a marked improvement in the culture of it generally, which has conducted our farmers to the happy result of an evident superior *quality* of wheat, as well as increase in quantity as hinted. In this desultory and often hastily sketching of odds and ends upon various subjects, I am aware that repetition is very often chargeable to me. It may, for aught I know, be justly so in what I further say. But in the ideas I proceed notwithstanding. Then, of the varieties of wheat grown here, that mentioned as having been raised on field No. 1 seems to stand first, and I think, everything considered, merits the place. It is a smooth head and rather round, plump, small berry, with a very small mesh with thin, tough and whitish bran. This year there was generally about 90 to 120 grains in the head, three grains in a breast on two opposite sides, with two on the others, and from nine to twelve and now and then fourteen deep. The stalk grows rather taller than other varieties, the straw thinner and of a blueish yellow color, (imparting the name,) soft and tough like tanned buck leather, and hence very difficult to harvest with a machine reaper. In my notes of last year I say 23½ bushels yield to the acre of this wheat on average of 65 acres, some of the land not very well prepared, nor adapted to the grain, but the greater portion might compare with most of my neighbor's favorably. My neighbor, Mr. C., told me he raised thirty-four bushels to the acre. When I speak of bushels I mean dry *measure*, four pecks or thirty-two quarts, which of this class of wheat weighs sixty-six pounds avoirdupois. When well ground and bolted, the good flour is seventy per cent., or seventy pounds flour to one hundred pounds wheat of a snow white, is dryer and consequently better.

Of that kind of wheat raised on field No. 2, much has been said in its favor. It is a bearded head, long, heavy red berry, with a deep mesh, two grains in a breast all round from eight to twelve deep. The straw is heavy, large, and of golden yellow hue. It is very subject to fall on account of the immense cavity in the stock. It weighs sixty pounds the bushel, and fifteen bushels are an average yield per acre. The flour is of rich yellow cast, is not so glutinous, kneads freer and smoother than the former, and the bread may perhaps require less condiment to be as nice to the palate. The bran is thicker and less elastic; the proportion of flour sixty-five from one hundred pounds. Millers say their mills need not be so sharp to grind it, and that it bolts freer, whilst the size of the berry renders it less subject to waste. Meantime its advocates contend it is not so liable to disease, which I think from my observation is true.

It was, I think, once said that wool and wheat grown south (of say 36° north latitude) *could not* be so good as that raised farther north. I respectfully invite future facts in denial of the proposition, and whether or not as far down as 32 degrees much difference is found. Mr. M., a gentleman from Ripley, Mississippi, visited us this summer, and in talking on this subject, he asserted that there was as good wheat raised in his State as in any other in the Union. And what is a little strange, he said good wheat is now grown on lands that fifteen years ago were covered with water the year round. *Cold* countries, it is generally conceded, have the advantages in the growth of wheat. In point of *climate* this may be fairly so. Yet may it not be very likely that a warmer country may have an offset in the way of *soil*, so that the result may with the same farming in either country be the same? Probably more lies in farming from the field to the table inclusive, than in either climate or soil, because we have been long ago admonished that, "In the sweat of thy face shall thou eat bread till thou return unto the ground." A. L. B.

MILL BEND, Tennessee, July, 1857.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Old Pastures---How Shall We Reclaim Them.

BY DAVID RICE, M.D.

WHEN I try to cure a sick patient, I, in the first place, study the pathology of the case, or, in other words, seek the exciting cause of the disease. The true nature of the complaint being found out, it is a very easy matter to apply the proper remedial agents.

There is a certain disease called chlorosis, in which there is a lack of one of the elements of the blood—a loss of a portion of its coloring matter—iron. The patient suffering from it, loses the glow of health; the light and life leave the eye; the roses upon the cheeks are supplanted by the pale lily, and a deadly pallor, almost like the touch from the easel and pencil of death, spreads over the whole body. The exciting cause here is a *lack* of one of the actual elements of the blood, rather than any foreign miasm acting through and poisoning the life-fluid, thereby communicating disease. We cure chlorosis by supplying the lacking element, administer iron, and it almost always effects a cure. . . . .

Old pastures that have lost their vitality—pastures that once luxuriated in verdant greensward—whose broad surfaces were clothed with a thick, velvet verdure of green blades and tender clover foliage, but have now become dry, barren and sere, covered with a garb of sorrel and whortlebury bushes. Such pastures are really sick. The disease is a sort of chlorosis. There is a lack of some important element or elements of vitality. The continual cropping of the vegetable life has deprived the soil faster than the decomposition of the rocks underneath could supply of one of its sources of fertility, and the fountains of vegetable life are dried or drying up.

Vegetable, as well as animal life, is dependent upon the presence and operation of certain proper principles of nutrition. Take those away and life becomes extinct. Let the best pasture (unless it has an inexhaustible soil) be fed year after year, without supplying it artificially with the necessary pabulum, and in the end it will become an "old pasture," a "worn out pasture." It will certainly die at last with a loss of vitality.

Can such pastures be cured? I answer, Yes. How shall we restore them and cause them again to rejoice in the green garb of youthful beauty, and to bud and blossom again as in their pristine state?

We must bring about this revivification by supplying them with their lost or lacking elements, or supply some element or substance that will by uniting with the already existency and present agents exact more rapid decompositions among them, and in this way supply the loss. For it is certain that sometimes the application of a single substance like ashes or gypsum, will effect a wonderful transformation. In its affinities, compositions, and decompositions, and double decompositions will ensue, and a great many of the real elements of vegetable life will be evolved; and so the barren earth will rejoice in verdure and beauty, and the husbandman be compensated for his toil.

How shall we ascertain the true pathology of the case, or how shall we learn what substances are lacking in order to apply the proper remedy? There are two ways—first, by chemical analysis; second, by actual experiment. A practical agricultural chemist by viewing and analysing soil will readily tell what are the most proper fertilizers to apply to a worn-out pasture.

Actual experiment, perhaps, is as good a way as any. Several substances—plaster, lime, ashes, muck, bone-dust, guano, barn-yard manure, or a mixture of two or three of these, can be applied separately in sufficient quantities to small patches of pasture in a single season. The result will tell what is wanting. The want ascertained, then apply it. This will do on pastures, but not on patients. We can experiment on the former to good advantage, but not on the latter. Let me tell you how an esteemed neighbor of mine cured a worn-out pasture of his by the application of plaster. Hear him. The gentleman to whom I refer is Moses Field, Esq., of this town.

"My experiments indicate that Plaster of Paris improves old pastures, when the underlying rock is new red sand-stone, or the conglomerate or pudding stone, which is made up of rounded granite boulders and pebbles, cemented together and slow of decomposition.

"In 1851 I applied 500 lbs. of plaster to five acres in Leverett, northwest of Long Plain, upon the lower slope of Mt. Mettawampe, with marked results. . In two months the imperfection of the work of sowing was indicated by waves in the grass as distinctly as the waves in an unevenly sowed piece of grain. In October, 1854, I sowed sixty acres. The effect was not visible the first season, and not until the latter part of the second; but at the third season the difference on the whole was strikingly marked. On the more exhausted pasture lands, I think the quantity to the acre of plaster should be about three hundred pounds. My pasture that for sixty years has borne little nutritious food for my stock, is now clothed with rich waving grass."

Mr. Field's experiment proved that plaster was needed on his land to effect a cure. It probably acted by new elementary principles from the rocky soil beneath, as well as by the effect of its own presence. Another pasture might require lime, ashes, guano, or bone-dust, or a mixture of some of them.—Ed.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Birds, Mischievous and Innocent, on the whole Beneficial.

Amherst, Mass., August 10, 1857.

Messrs. Editors:—Having for the last four or five years carefully studied the habits of our summer birds, I would like to say a few words through your Farmers' Magazine concerning the crow, one of the most common of our resident birds.

It is considered doubtful by many whether the crow is in the habit of destroying the nests of other birds. On several occasions, upon visiting the nests of robins and other of our—I can almost say—domestic birds, in which only a few days before I had seen eggs, I have found them much disturbed, and, with the exception of a few small pieces of broken shells and drops of yolk, entirely empty. Until last May I was unable to account for this. About the middle of that month a pair of robins built a nest upon an apple tree in the yard. I felt a peculiar interest in these birds, for they had occupied a nest in that same tree for several successive years. Well, these birds in due time laid four eggs, and commenced the process of incubation.

Everything was going on regularly and happily, when one day my attention was attracted by the loud screaming and crying of both parent birds. Upon looking at the nest, I discovered an old crow sitting upon the branch nearest the nest deliberately eating the eggs. The robins fought bravely, but were unable to force him to abandon the feast. I immediately took sides with the robins, and quickly drove the intruder to the woods, but it was too late. The nest was destroyed and the eggs eaten. I have upon several occasions since, seen the crow engaged in the same thieving business; and I now consider it quite settled, that the crow, as has frequently been charged upon him, is a robber and devourer of the eggs and young of the smaller birds, as well as a notorious rogue in the cornfield.

But it is said, "The devil should have his due;" and it can not be denied that the crow is a valuable scavenger, and that by the gorging of grubs, beetles, moths, etc., he is an effective auxiliary to man in the battle he is constantly fighting with the insect tribes. Whether the good he does, or the evil, preponderates, I leave others to judge.

Truly yours, N. S. C.

The good done by any bird that enlivens our American heavens, probably outweighs the evil. We have not one quarter as many birds as we ought to have, and as we should have but for the insensate folly of popping them over for the fun of it. To us it seems a most cruel, heartless sort of pleasure to kill innocent birds when gathering noxious insects for themselves and their young, and yet there are thousands pursuing it. Robins, swallows, everything that has wings, falls before them. It is a shame, and will cost the farmers of the country hundreds of millions, if it can not be checked. Man has no adequate protection against insects but in the birds. Let us protect the birds and they will protect us.—Ed.

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## American Guano.

The ship Aspasia is hourly expected laden with one hundred tons of this superior fertilizer from Jarvis and Baker's Islands, two of the possessions of the American Company secured and protected by a late act of Congress. The attention of agriculturists is particularly called to the following facts:

ANALYSIS OF JARVIS ISLAND GUANO, BY DR. HAYS.

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|---|---|
| Crenates and humates of ammonia | 13.50 |
| Oily matter and eithific acids, embracing water and carbonic acids: | |
| Phosphoric acid and lime | 86.00 |
| Magnesia from humates | 2.21 |
| Sulphate of lime and sulphate of soda | 14.96 |
| Silicia or sand | 82 |
| Total | 117.49 |

ANALYSIS OF BAKER ISLAND GUANO, BY DR. GALE.

| | |
|---|---|
| Organic compounds yielding ammonia, etc | 9.940 |
| Combined water | 2.500 |
| Carbonic acid from organic compounds of lime | 600 |
| Bone phosphate of lime, and bone phosphate magnesia, (containing phosphoric acid, 38.67) | 83.266 |
| Sulphate of soda | 1.263 |
| Common salt | 1.615 |
| Loss | 816 |
| Total | 100.000 |

The analysis shows that more than 80 per cent. of these guanos consist of the phosphate of lime and of magnesia, in an insoluble state, or in just such a condition that the roots of plants will take up and appropriate so much of the salt as is requisite to perfect the same.

Now, if we examine the analysis of wheat, one of the great staples of our Middle and Western States, we find that every 100 pounds of its ashes contains from 50 to 60 pounds of these phosphates, which must have been taken up from the soil. A large part of these salts are required to form the hull or envelope of the kernel, and are indispensable to the perfection of the seed. Hence the special value of the phosphate guanos. And furthermore, as they are only soluble by reason of the vital power of the plant, they remain in the soil as a reservoir, ready to be drawn upon only when the roots of the plant require their appropriation to perfect the growth thereof. These are the reasons why the guanos in question should be used in preference to the ammonia-yielding guanos. The effects of the former last for years, and the soil acquires from its use an arcumulative power; while the latter, annually applied, is exhausted with the crop; the soil indirectly becomes exhausted from the annually forced crop.

These are interesting and useful facts for the farmers of our country, and for this reason we publish them.

The Commissioner of Patents has distributed five barrels of American Guano to farmers and planters in every section of the Union, from Maine to Texas, with circular forms to be filled up by them of the results of the experiment. Any one may be convinced of the superior excellence of American Guano, by calling at No. 66 William street, in this city. The Peruvian article is now held at $70 per ton, while the American can be furnished at $50, and has been demonstrated to be far superior as a fertilizer.

The above appears in a late number of the *Weekly News*, without a name to indicate its authorship or inform its readers on what authority, other than the editor's, it goes forth. In copying it we offer our readers the following remarks:

1. The company, which it is said can afford this Guano at $50 a ton, is an *American Company.* The Islands whence it comes are *American Islands.* The persons who will be employed to bring it to our shores, will be mostly *Americans.* It will be likely to come in *American* shipping. All this is well. The sooner American citizens, native and adopted, furnish our necessaries and perform our labor, the better will it be for us all. We should like to ride on a railroad constructed of American iron, smelted with American coal, by American hands. When we stop over night, we should like to sleep under American blankets; and if we take a lunch by the way, we should really a little prefer that the wheat of which our bread is made should have been grown with an American fertilizer. We are all over American; we would eat, drink, wear, sleep on, ride over, have, hold and use American goods, if we could get them, in preference to any other; and we really wish that our farmers would purchase this American guano in preference to Peruvian, just as soon as they can ascertain its intrinsic worth and find it offered at or within that figure.

2. Somebody, in the article above copied, states that Peruvian guano is now held at $70 a ton. We suppose that is so. And we suppose that fancy farmers, who have amassed a fortune in speculating on the labor of the working farmer, can afford to pay that price, or perhaps almost any other. If market-gardeners, nursery-men, fruit-growers, and some others, say that they can afford to pay $70 a ton for Peruvian guano out of the results of their business, we have no controversy with them. They probably understand that matter better than we do. But we are bound to say, and to give our readers the benefit of our opinion, if it shall prove beneficial, that the general farmer, having no special facilities for making money out of his crops, can hardly afford $70 a ton for Peruvian guano. It is the best manure yet offered, but is not above all price, may be purchased too dear, and fail to leave the purchaser a fair profit. For most kinds of farming it is vastly better to have recourse to other modes of keeping up fertility, such as ploughing in clover, digging muck, preserving carefully all the home fertilizers, and thus making the farm enrich itself, than to purchase manures at $70 or even at $60 a ton. We are no prophet, nor a prophet's son, but we do not believe that the time is far distant when $50 a ton will be found quite as much as is profitable for the general run of farmers to pay for any, even the best, manures; and if we were practicing to live by farming, we should certainly take a course which, if other farmers would go with us, would soon bring the Peruvian government to be willing to sell their guano, of which they unquestionably have an immense supply, at that price, or less. That there are individual cases where purchasers have done well at a much higher price, is unquestionable; but there are ten times more cases where a loss has accrued from its purchase at that price; and since the fortunate holders of the Chincha Islands can very well afford to sell so as to give the purchaser a good bargain, we really wish they may be starved to it. Fifty dollars a ton is enough for them to receive, and it is enough for us to give.

3. Somebody in this same article, says that the American guano can be furnished at $50. There must be some mistake in this if the writer means by it that it can not be sold at less. We have heard the president of the company say that it can be afforded at $40, and leave room for a very large profit. This may mean one hundred per cent. on the capital invested. If so, it can be afforded from 40 all the way down to 20 dollars a ton, according to its real worth, when that point shall be settled. We would here say that the company have done a very fair and honorable thing, in giving out considerable quantities of this guano to farmers that it may be subjected to a fair trial. We have been of opinion that no phosphatic guano, as the analysis shows this to be, is worth fifty dollars a ton, nor forty; but we sincerely hope that this

may prove all that is claimed for it, better even than Peruvian. The discoverers have done a good thing for the country, should it prove valuable, and we hope their enterprise may be rewarded; but as commerce is in no respect a higher or more important calling than agriculture, and as merchants have evinced in all ages quite as much competency as farmers to take care of themselves, we feel justified while calling upon the latter to be *American* in their feelings, to patronize an American guano company heartily, as fast as they can do so without compromising their own interests, in reminding them also to be cautious, to know the real value of the article before they purchase, and then to purchase only as liberally as they can afford. And if they remember that commerce steals a march upon agriculture ten times oftener than agriculture upon commerce, we have no sort of objection. —Ed.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Saving Seed Corn.

Friends Nash & Parish:—Your *Plough* is an excellant implement, and works well in turning over the *sod*, and on old ground that has been worked for years. But good tools are not all that the thrifty husbandman wants to insure him good crops—those that will pay him for his expense and labor. He may have the best of *Ploughs*, *hoes*, etc., and put his ground in the best of order, but unless he has good seed he can not expect a good crop.

During the spring of 1856, the seed corn in this part of the country proved almost a perfect failure, especially the first planting, as most who planted early had to replant. This, with early frosts, made a large quantity of poor or soft corn. No one could give the reason for it. At the time I talked with many of my neighbors upon the subject, and I found that nearly all of them planted the corn that they had cut up and put into stouts. The corn crop proved a poor one. Hardly a farmer had enough for his own use. This caused the price of corn to rise from the usual price (thirty cents) to $2 per bushel, and it could not be had at that, for it was not in the country.

Last spring came around, and many of the farmers did the same as on the previous one. Corn that stood out all winter in the hill came up finely, while that which was cut and stouted up or put into bins proved a universal failure. Therefore, the crop of corn will be nothing like a full one this season. The season was cold and very late; and where the seed failed the first planting, if frost comes as early as common, the second planting will be cut off. My reasons for corn not growing that is cut and stouted up or put in large bins, are the same as friend Bacon's, given in the July number of the *Plough, Loom, and Anvil*, on page 20.

As the seed had proven such a failure in the spring of 1856, I thought that I would try a new mode of saving my *seed corn*, if any grew; as my seed was old corn sent to me by a friend from Ohio, it nearly all grew, the first planting. In the latter part of September, when my corn was fairly out of the milk, and was glazed, I went and selected the best of it, picked it and strung it up under my shed upon poles, so that the air had a free circulation. It hung there until it was nearly dry, I then put it up in the chamber where a stove pipe went through, and it remained there until spring.

When it got dry, it shriveled up and looked as if it had no substance in it. I thought it was uncertain whether it would grow. Before planting I put some into the ground to see if it would germinate, and it came up. I planted it into the field; and while planting one of my neighbors was there, and he looked at it and laughed at me for being so foolish as to plant such corn this late season. "Why," says he, "if that corn grows, there is no danger but what all corn will grow. If that grows mine will grow, surely." His corn had been cut up and stood in the stout until cold weather came, then it was picked and put into a crib. But did his all grow? He planted it, and about one-half of it came, while the corn that I had in the chamber grew to a kernel. Even if the kernel was shrunk, the germination principle was not killed. This proves to me that corn for seed should be gathered as soon as the milk is out of it and it is fairly glazed over. An old farmer, who has seen seventy summers, said to me once: "If you want to have your seed corn come up well, save your seed before your corn is fairly ripe." My advice to all farmers that have had bad luck in having corn fail is, save your corn before it is fairly ripe, and put it where it will cure, and keep it dry until you want to plant it. Millions of dollars have been lost during the last crop of corn, and there will be dollars lost this fall, for no other reason than by planting poor seed. Messrs. Editors, I hope that you will give your opinion upon this subject, for it is of vast importance. I hope your correspondents will write, and if they have not tried it, may they do so and give their experience through the *Plough, Loom, and Anvil.*

Respectfully yours, L. S. Spencer.

Lynn, Warren Co., Iowa.

We would prefer to select seed as soon as fairly ripe, but would be careful not to do it sooner; and would then keep it in a dry and cool place, though it would not be seriously injured by wintering in a heated room, as all experience shows, many farmers always keeping it suspended over the kitchen fire.—Ed.

# Farm Life.

"Oh, friendly to the best pursuits of man,
Friendly to the thought, to virtue, and to peace,
Domestic life, in rural pleasure passed!
Few know thy value and few taste thy sweets;
Though many boast thy favors, and affect
To understand and choose thee for their own."—[Cowper.

Education is by no means confined to schools. These are but rudimental and auxiliary to that training which is begun in the cradle and finished only at death. The nursery days of our life, and its business pursuits, have an important bearing upon the formation of character. What a man does, as well as what he studies in books, educates him. The scenes amid which his boyhood is passed, out of schools, the objects which occupy his thoughts, the problems he daily solves in earning his bread, quite as much shape character as the scenes and problems of a school-room. Agriculture is the largest and most important of all our material interests, the occupation to which the largest portion of our countrymen are born. It is a matter of interest to consider the bearing of this pursuit upon the characters of those who are engaged in it.

There are those who consider this a menial occupation—degrading to the body by the toil it imposes, and belittleing to the mind by the attention it requires to the minute details of its business. They regard its implements as the badges of servility, and look with disdain upon the plow-boy's lot. They depreciate the influence of farm life upon the social and mental culture, and look upon the rustic man as a type of boorishness and ignorance. They think it mainly a business for brute muscles, where mind can achieve no conquests, and where skillful labor finds a poor reward. They think the way of a man of genius is inevitably hedged up upon the farm—that there is no heroic work to be performed, no laurels to be won. If he would do deeds worthy of his manhood, gain wealth, gain honor, make himself a name that will live, he must turn to nobler occupations.

If those who are strangers to the farm alone cherished this view, we could abide it in silence. But when farmers themselves admit this impeachment of their calling, and the pestilence of this heresy finds its way to our firesides, and makes our sons and daughters discontented with our rural homes, it is time to speak out. If comparisons must be made, which are invidious, the shadows shall not fall on the farmer's lot. It is time that other callings were stripped of that romance in which they are veiled, and that the sons of the farm should know what they have in prospect when they turn their backs upon the homes of their youth. It is meet that they should better understand the blessings of their lot, its capacities for improvement, and its superiority to all other occupations. We would arrest that feeling of disquiet which keeps so large a part of our rural population perpetually longing for new fields of enterprise. We would have them settled, at least a portion of them, in the old parish, and bend all their energies to the improvement and adornment of their homes.—*Rev. William Clift.*

## Notes by the Way.

On the New-York and Erie and the Lake Shore roads, between this city and the State line, a distance of about 500 miles, there is some rather poor land, considerable that is but ordinarily good, and a great deal that is excellent, so good that it would be difficult to find much better, consisting of fertile valleys and beautiful slopes, with hill-tops and broad table lands hardly inferior to either.

Why is it that farmers on the inferior lands are doing better, as compared with what one might expect, than those on the best? If the fact is admitted, and we rather think it must be, how shall we account for it? Have those on the best lands set too high an estimate upon ease? As nature does more for them, have they concluded to do less for themselves? And does it require a rather hard soil to make your real energetic, go-ahead farmers? We throw out these inquiries for others to answer, hoping it can be shown that the energy and enterprise of the farmer are not to deteriorate with the goodness of the soil.

At Ripley, the last town in this State, on the Lake Shore road, we found a gentleman—we do not mean in any miserable, technical sense, as if a gentleman and a working farmer can not be the same, for we found him with his coat off, hard at work—who is cultivating a large farm, and is destined we believe to distinguish himself as a breeder of fine stock, H. J. Cowden. Mr. Cowden's herd consists of thirty head of Durhams, pure bloods, we think he said, without exception, or at any rate with few exceptions. He has made a fine beginning, and will hardly fail of advancing his own interest, as he certainly will that of the country. Among Mr. C.'s stock, not to mention others, is the famous bull Ivanhoe, from the imported bull, Harold 2d, 1688 Allen's Herd Book.

In this same town of Ripley, we accepted an invitation to dine with Mr. Loren Shattuck, a good substantial farmer, whose lady seemed at first rather disinclined towards the New-York *corps editorial*, on account of Mr. Greeley's criticisms on the cooking of farmers' wives. If loud laughing makes a good dinner, we certainly had it; and if it does not, we had it; for in the first place there was the staff of life, and a good staff it was; we never ate such bread in New-York; Mr. Greeley never did and probably never will. It was made of wheat grown on the farm, made at home, made just right, was white as snow, porous without large cavities, tender, moist, perfect; would have taken the premium at any fair in the Union. We ate just such at a neighboring hotel, but have not seen quite as good otherwhere. The butter was good also; and where there is such bread and butter there can not be very poor living. The meat was good enough, and the pies were first-rate, and the good woman concluded to forgive Mr. Greeley after all, on the ground that there is some bad cooking in farmers' families, and that his strictures were on the whole adapted to abate the evil. The fact is, we interceded for Mr. Greeley as eloquently as we could, having some fear lest so many women as he had offended on the score of cooking might possibly cook up a plan to overthrow the New-York *Tribune.* We hope the editor of that journal will remember us if we should ever get into a like trouble with the ladies.

John D. Patterson, of Westfield, has such a flock of French Marinos as we have nowhere seen before; 300 in number, bred from the choicest importations, and certainly with eminent success. We understood Mr. P. that it is not his intention to enlarge his flock, but to use every possible exertion to improve the quality. It has been his object to combine size of body with fineness and quantity of fleece. He does not claim that the quality of his wool is equal to that of the Saxony sheep, but that it is good, and that the quantity is large, and that the sheep are large and hardy. His shepherd told us that he recently sold two lambs of eleven months old, the weights of which (live weight, of course) were 185 and 197 lbs. Two lambs of nine months old were shown us, the weights of which were not known; but such was their size, that after seeing them we could the more readily believe the report of the others. Several bucks, we understand, have been sold from this flock for $1000 each, and many ewes for $250 each. So we were assured; and we were informed by persons who ought to know, that Mr. Patterson is the last man to be suspected of reporting fictitious prices for the purpose of affecting future sales. These prices are too high to be thought of for the ordinary purposes of farming; and yet we rejoice in such improvements, believing that the benefits will ere long pass round, and that the whole country will participate in them.

Mr. Elam C. Bliss, of Westfield also, showed us a lot of very beautiful young Devon cattle, and stated that a few months ago he sold a calf previous to its birth for $100, all risks with the purchaser; and that the purchaser is now exceedingly pleased with his bargain.

We name such facts as indicative of a spirit of improvement, which we are pleased to see, and not because we suppose it would be advisable for all farmers to pay fabulous prices for fine stock. Call these high breeders fancy men, if you please, but there is some evidence that they know what they are about; call those who purchase of them by what epithet you choose, but some of them at least will be likely to take care of themselves; and the advantages of high-bred stock will pass around till all will become participants. We forgot to mention in the proper place, that some fifteen months ago Mr. Bliss, of whose

Devon calf, sold quite as early as some of our veal here in New-York is eaten for $100, paid $1500 for a Jack, which now promises to be a good investment, both for him and for Chataugue county; and that one of Mr. Patterson's bucks is the same which drew a high premium (the highest we think) at the world's fair in Paris. The name we have forgotten, and of the price we only recollect that it was enormous; but we understood Mr. P. that he would not wish now to retrace the measure of the importation if he could.

Other observations between the western and the eastern extremities of New-York we would like to detail, but feel compelled to omit. On one thing, however, we will dwell a little, even at the risk of wearying our readers. It is the vineyard of the Messrs. Fay, father and son, at Salem Cross Roads, in the town of Portland, Chatauque Co. Forty-six years ago the elder Mr. Fay removed from Worcester county, Mass., and settled in this county, then entirely new. Mr. Fay is an excellent farmer, as the land, which he took in its then primeval state, and has ever since carried on, with the aid of sons and a grandson, fully attests. The old orchard, planted with seeds he carried from Massachusetts, is to-day one of the freshest and most flourishing in the country. The trees at first were but seedlings. The trees are now ingrafted, and most of them are abundantly productive of choice fruit.

On one part of Mr. Fay's farm, is a water meadow of twenty acres, the finest by far we have seen in this country. The crop, which was being taken from it at the time of our visit, could be hardly less than three tons to the acre, and as good hay as ever was cut. The practice, we believe, is to mow it but once, though we are not positive on this point. For twelve years it has been under the watering process, no manure having been used all that time, and we were told that the crops were good from the first, but have been steadily increasing, the present crop being probably a little better than any other. On a future occasion we may say more of this meadow, and give directions for producing the like; for though it must be confessed that few farms afford such an opportunity for inexpensive and yet effective irrigation as this, yet there are many on which the same process might be applied in a less extent. Think of the value of twenty acres, or even half that extent, or a quarter, producing three tons of first-rate hay to the acre, without a particle of manure, and then furnishing manure for other portions of the farm, and you will have some idea of the value of irrigation, where the position of the land admits, as in this case, of a cheap application.

But it was our present purpose to speak of the vineyard. The elder Mr. Fay and his son, and Mr. Bykman, a grandson of the former, have together five acres of vineyard. We have not space for particulars. Suffice it to say, that some of their vines are seven years old, others six, five, and so on down; and that their plan has been from the beginning not to remit known and profitable crops, but to add the culture of grapes to these, so that in case of failure in the new branch of business, their success in the old would not be much interfered with. This has ever seemed to us a wise course, in relation to new undertakings by the farmer. There is a plot, for instance, which might produce more income, if set with cranberries, than all the rest of the farm. But there is some uncertainty. The farmer fears to let go his hold of the old and sure crops for what is doubtful. In this he is right. But can he not experiment on what gives some sort of promise of being more profitable, without letting go what is better known and more sure? It has seemed to us that the true policy is for the farmer to adhere closely to some one or two branches of farming, well known to him and suited to his land, as dairying, stock-growing, the cultivation of the cereals and others; to make this or these his main dependence, but to try his hand at the same time at other branches so cautiously as not essentially to interfere with the main business. This is just what the Messrs. Fay have done. Without neglecting other, and perhaps more sure employment of their land, they have produced five acres of beautiful vineyard, and are going on to enlarge it by little and little from one year to another. Now if the vineyard should wholly fail, they will not be ruined by it. If, on the other hand, it should produce half as well as it now promises, there is wealth in it; and it would now seem hardly possible that they will fail of a rich reward for the labor bestowed upon it. Very much like this is the case of a farmer whom we have known in another part of the country. There was a plot on his farm well adapted to the culture of the cranberry. He was not certain of success; and not being wealthy, and having an expensive family, he would not have dared to grow a bushel less of corn and other grains, but could make an experiment at the cranberry business at intervals which could be spared from the other crops. He did so, and the result has been that for the last ten years the cramberry has had yielded him more net income than all the rest of his farm, and he is now wealthy. Two years ago this farmer said to us, "If I had bent all my force to the cranberry culture when I began, fifteen years ago, I should have been rich now;" and he ended by saying, "what a fool I was." We replied, that he had taken a profoundly wise course; because he had felt his way safely, without imperilling his creditors, (for fifteen years ago he was deeply in debt,) and without subjecting his family to a doubtful support. Such was the literal truth; for although the cranberry culture turned out the most profitable investment, yet he could not have known that beforehand; and he was wise to hold on upon the corn and the broom corn, the oats, peas, beans and clover, till assured by actual results that he had hold of something better. And then he was rich enough as it was; a good farm, under high cultivation, well stocked, all paid for, a few thousands beforehand, frugal habits, a family frugal, sensible, intelligent, healthy; is there a richer man in the world? If any, let him speak, for we want to go and see him—would go farther to see a richer man than that, than to see all the sights about, from Dan Rice's circus to Christy's Minstrels, now attracting cockneys and fools in "famous London Town."

We want to say more of farming on the Erie Road, but have not space. Our moral is, if the farmers in that southern line of counties will bear with us, that they are not doing quite as well, comparatively, as farmers farther east, on poorer land. Too many of them are dreaming of a better country West. The truth is, their country is good enough. Its situation on the line of one of the greatest thoroughfares in the world, makes it doubly desirable. Whether the New-York and Erie Road is managed well for the stockholders, is more than we know. That it is well conducted for the traveling community, we have abundant reason to know; and that it is of immense value to the farmers along the route, present prices as compared with former, two, three, and four times as much, sufficiently attest. If the farmers of Western Pennsylvania and Southern New-York had paid for the whole road, and were never to get a cent of dividend, they would still be gainers, by the rise of their produce and land. Immense extents are to-day worth ten, twenty and thirty dollars an acre more than they would have been worth for half a century to come without the road. In view of such facts, we shall venture to question whether the people of these regions are actuated by quite as liberal a spirit towards the road as becomes them. We think we have seen some evidence within the last five weeks that they are not.—Ed.

FOR THE AMERICAN FARMERS' MAGAZINE.

## The Season, Crops, Harvest, etc.

Newman's Mills, Indiana Co., Pa., Aug. 1, 1857.

Messrs. Editors:—Last winter was a remarkable one. It was very cold and wintry, with deep snow till Tuesday, the third day of February, when it began to be a little milder. On the fourth of February it set in warm and rainy; and the snow nearly all went off. It was quite warm and spring-like. Some part of February was so warm and free from snow, and even frost, that the grain and grass began to start to grow as they ordinarily do in April. This kind of weather lasted till the beginning of March. After that the weather was variable till the 23d of March, on the morning of which we had lightning, heavy thunder, and abundant rain. From that time, on through April and May, the weather was cold, windy, and backward, not half so spring-like as in February.

We had morning *frosts* till the 6th of June. There was but little corn planted till after the 25th of May. Oats were sowed nearly a month later than usual. On Monday, the 8th of June, it rained heavily in the forenoon, and washed the fields and roads considerably. But that night the rain fell in torrents. Next morning, such washed and gullied looking corn fields, oat fields, and roads! And since that time we have had only seventeen days till the first day of August, during which it has rained more or less, at times powerfully, viz.: June 14, 19, 21, 23, 24, 25, 26, 27 and 28, and July 3, 4, 7, 8, 14, 17, 24 and 25. Nearly all of the rains have come from the east or south-east.

Old grain is very scarce and prices high; in fact hard to be had at any price. The new wheat and rye are good. Many fields are heavy. A neighbor of mine has a field of wheat of ten acres, which I hear he rates at thirty bushels the acre. Others reckon on twenty bushels the acre. There was a large breadth sown last fall to wheat, and most of it on land newly cleared, as last season was a good one for clearing land. The oats were sown very late, but they give promise, at present, of a large yield, and corn looks tolerably well, or would if it were the first of July instead of August first. I fear the frosts, if at all early, will find it not ready to bear their cold touch unharmed.

Potatoes, as many as were planted, look well, and there are yet no signs of rot, so far as I know. So many potatoes were frozen last year, and seed was so scarce, that not very many were planted about here. As it rains almost daily, and some days almost all day and night, harvest is progressing very slowly and unsatisfactorily. There is a poor prospect of much new land being cleared this season in time for wheat next fall. There is so much rain, the timber will not burn without great labor and pains-taking.

I esteem your Magazine of Agriculture very highly, and would most heartily recommend it to all cultivators of the *soil* everywhere, as a safe guide for them. I think it grows better, like wine, as it grows older. I am right glad to see in it such articles as "Multum in Parvo," "Chemistry for the Million," "Health, Morals, and Patriotism," and such like. Yours truly, DAVID MILLS.

# Horticultural.

## Blanching of Celery in Trenches.

THERE are two modes of blanching: one is to draw the earth up to the plants from time to time while they are growing; the other is to defer the earthing until the plants are nearly full grown. We prefer the first method. Success in cultivating celery depends mostly on inducing a rapid growth; and to insure this, an abundant supply of manure and frequent stirring of the soil are indispensable. Watering with liquid manure is very beneficial. The hoe should be used as soon as the plants have fairly begun to grow, and the ground kept loose and free from weeds. The plants will be greatly benefited by stirring the soil immediately after a rain. As soon as rapid growth has become established, or when the plants are about a foot high, the process of earthing may be begun. As the leaves and stalks grow in a spreading manner, it is necessary, in the first place, to collect the stalks in one hand, and with the other draw up some earth and press it against the plant just hard enough to keep the stalks together. The hoe may then be used to complete the process, but the crown or heart of the plant must not be covered until the blanching is finished late in the fall. The earthing must be repeated from time to time as the plants progress in growth, and it should be done during dry weather, since, if the earth is wet, the celery is apt to become "rusted." In our next number we shall give directions as to the best mode of keeping celery during the winter.

## Ripening of Fruits.

THE ripening is a process as little understood as the period of picking, and various directions have been given on this subject by different writers, some advising it to be spread out upon shelves in the fruit room, and others to be kept in boxes or drawers, excluded from the light and air. We have found that very few early pears will ripen well when exposed to the air on open shelves, even in a tolerably close fruit room. At this season of the year the atmosphere is too dry, and the currents of the air too great, and the juices are too rapidly exhausted. It is far better to place the fruit in boxes of moderate size, and let them stand in the fruit room or some other cool and rather dark place, where they retain their juices better than if exposed on shelves. We have tried this experiment, and found that those fruits kept in small quantities in a drawer, shut out from the light, were more juicy, higher flavored, and more delicious than when preserved in other ways. As a general rule, we should advise all early pears to be placed in boxes or drawers, covered with one or two thicknesses of paper, and kept excluded from light and air, where the temperature is cool and as even as possible at that season. A damp, cool cellar is not so favorable a place as a cool, dry room, as the former checks the ripening process too suddenly; such a situation will do for the autumn and winter pears, but not for the early kinds.

Apples, being less dependent for their excellence on their delicacy of flavor, than for their tenderness, juiciness, etc., need only be gathered a few days before eating; they are better placed in baskets or barrels, in moderate quantity, than to be spread out on shelves. Some of these are about as good when they fall from the tree as by any process of keeping. The Red Astrachan, Porter, and some of the more acid kind, seem to acquire their highest flavor in this way. But as a general rule they should be gathered a few days before eating. The sweet varieties, particularly such as the Bough, Golden Sweet, and some others, become mealy if allowed to hang too long.

Peaches and Plums, except clingstones and prunes, are only fit to eat as they drop from the tree. The only objection to this mode of gathering, is, that it bruises and disfigures the fruit. They should not, however, be picked unless they part from the stem upon the least touch. Clingstones and prunes may be kept in the fruit room for one or more months.

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## Transplanting Strawberries.

The best time is always early in spring, as at that time, we have only to set out the plants with ordinary care for all to grow. They will bear abundantly the second season, and if kept clean and cultivated, for two or three years afterwards.

Transplanted immediately after bearing, and while the plants are somewhat exhausted, and consequently in a partially dormant state, strawberries will do well, and afford as good a crop next season, as by spring transplanting, but more care and labor are required. The ground is first to be prepared by properly enriching it, and making it clean and mellow.

The plants should be selected from the youngest well-rooted runners of the previous year. They should be lifted out with a spade, and the earth shaken off, and not pulled out, as is often done to the injury of the roots. All the full expanded leaves are to be clipped off, leaving only the small, half-open ones. The roots are then to be dipped in mud, made in a pan or pail for this purpose, thick enough to leave a coating on them about the fourth of an inch. They are then to be transplanted, spreading out the fibres as much as may be convenient, and taking care not to cover the crown.—*Country Gent.*

*Remarks.*—Every family that has a patch of ground should cultivate a bed of strawberries. For more particular directions, see our number, Sept., 1856, page 146.—Ed.

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## Soap for Killing Borers in Trees.

S. S. Green, of East Cambridge, has made an experiment with this article. He has in his garden a white ash tree, which was full of these worms, so fatal to our fruit and ornamental trees. He covered every place on the tree which appeared to be wounded by them, with common hard soap, nicely rubbed into the place where the borer seemed to have entered. During the rains of this week, the soap dissolved and penetrated to the worms, which forced them out by scores, causing their death.—*Exchange.*

# MECHANICS' GUIDE.

## Recent American Inventions.


**Reaping and Mowing Machine.**

We are not quite sure that the machine described below has not acquired a foreign reputation far greater than it has achieved as yet in this country. Our readers are aware that a great trial of reapers and mowers has been recently made in England, in which our own inventors have again carried off the palm. We have now before us the *Mark Lane Express* and *The Salisbury and Winchester Journal*, and both speak in unqualified praise of the "Eagle" Mower and

Reaper. The latter paper says that English makers have nothing to fear "with the exception of the American Eagle." So far as we can judge, this was the only American Reaper that competed for the prize. The *Mark Lane Express* says: "It professes to cut grain or grass at all heights, and on any kind of ground, however rough and trying. It is only right to say that its performance so far approaches its promise." We make these extracts in the hope that our own agriculturalists will be careful not to neglect anything worthy of their attention, and that our inventors may see a practical proof that the world is their legitimate field, and that they have good reason for expecting entire fairness in the trials made even beyond sea of the comparative merits of their inventions. We only add that this invention received the premium of a thousand dollars from the Massachusetts Society in 1856. Its cost is $125, and is now manufactured by Messrs. Nourse, Mason & Co., of Boston.

The proprietors are interested in the manufacture and sale of Heath's Combined Mower and Reaper, manufacturing it only as a combined machine. Some of the superior merits of this Machine are set forth under the following heads:

1. The machine has no gear. The main or driving wheel, on which it moves, has two cams in its face or rim; low down, near the ground, is a friction roller, between the cams; this friction roller revolves on a pin which is attached to the vibrating bar. The vibrating bar is below the frame in front of the wheel, and moves between stirrups on the frame. The inner end of the vibrating bar is attached to the cutter bar. As the main wheel revolves, the friction roller is driven backward and forward by the cams or zigzags, imparting motion to the cutter bar.

This main wheel and friction roller constitute the whole driving machinery, and the application of the power being direct to the cutters, very little of the draught is consumed by friction, so that in fact the machine is of very light draught and easily operated by two horses for an entire day, without any necessity of change of team.

2. There are two sets of cutters—an upper and lower set—the upper set vibrating, and the lower ones remaining stationary. The lower cutters project an inch beyond the upper ones, and serve the double purpose of cutter and guard—being each $\frac{1}{8}$ inch thick and $\frac{1}{4}$ inch wide. Both upper and lower cutters are made of wrought iron, faced with cast steel; and are equal in quality to the best edge tools in use. The cutters are held together by a spring pressure bar, and each one is held to the bar by a screw bolt, so that in case of accident the injured one can be removed and another substituted in a moment, in the field. It will thus be seen that the grain or grass is cut between two sharp edges, of the best quality of temper—the cutters acting like shears, excepting that one blade is stationary. Hence the ease and certainty of cut, whether the grain or grass be wet or dry, so that it is never necessary to urge the team beyond a natural gait, the machine cutting as well at a moderate as at a high speed.

3. The arrangement for elevating the cutters in passing obstructions, is simple, convenient and effective. In front of the seat, but in no way connected with it, is a platform or foot-board, attached to the back rail of the machine. When cutting through a wet place or slough, or passing other obstructions, the driver rises up and with his right foot throws his weight, or enough of it, upon the foot-board or lever, to instantly raise the cutting apparatus from one to eight inches, as may be desired, without checking the team; and the obstruction passed, he removes his foot from the lever, and the cutters at once drop down and are at work. Again, in turning the corners, it may sometimes be necessary to drive over the cut grain or grass; and in such case, by simply elevating the front part, the machine will pass over the grain or grass with as little inconvenience as a cart.

4. The seat is placed on hickory springs, which fasten to the hounds of the draught pole, just forward of the axle—the draught pole hounds being attached to the frame back of and below the axle. The springs of the seat bear on the

cap of the box, over the axle, which thus becomes a fulcrum for them. By this arrangement, the driver's weight is made to balance the weight of the draught pole—thus relieving the necks of the horses from burden.

5. The end of the machine next to the standing grain or grass is carried on a wheel of about sixteen inches in diameter; and the principal part of the weight being at one side of the draught pole, that counterbalances the greater length and the cutting apparatus of the machine at the other side of the pole—thereby preventing "side draught."

6. By means of the gauge-block attached to the draught pole, the cutters can be set to any desired height.

7. When the machine is stopped in the grain or grass, it can be started ahead at once into its work, without first backing the team.

8. The reel is of essential service when the grain or grass leans from the machine.

Upon a trial instituted by the Indiana State Board of Agriculture, and continued during three days, the Committee awarded the highest prize to Heath's Machine. This Machine has also won the prize at various other trials in the Western States.

## Pratt's Family Sewing Machine.

We have received many inquiries in reference to a "ten dollar sewing machine," and though we can not yet exhibit the exact thing described, we can come pretty near it. We have intended to give a short history of the progress of art and invention in this direction, and our readers may expect, ere long, a little narrative in this curious department of history. Thus far, however, a well working "ten-dollar" sewing machine has not come under our observation. But we now have some near approximation to it. Hand machines, that do as good work as hand machines can be expected to do, may now be had for twelve dollars, though their power is so much inferior to those moved by the foot, that we can not advise their use. We have just examined with great care the construction and action of one of these cheap machines, which certainly promises very much. We do not perceive why it is not a complete success. We refer to the sewing machine of Mr. S. F. Pratt, of Boston. It has been only some six or seven months before the public, but has begun to acquire a good and wide reputation. Unlike other sewing machines, it stands upon a small table which is supported by a single pedestal, like a "light stand." Its action is also new. In most of the machines in use, the work is moved forward by the revolution of a wheel having a rough or corrugated surface, which carries with it any substance (cloth, etc.,) placed upon it. In this the "feed motion" is secured by the ascent of a corrugated edge, from beneath which confines the cloth against the holder on one side, (the finished side,) while another behind it, like the end of a dull chisel, then coming up and lifting it, secures motion from the other side, the left hand holding and guiding the cloth, then draws straight this loop, and the material is ready for the next movement. Hence the motion of the cloth is not entirely unlike the movement of a canker worm or geometer, and the length of the loop is controlled by the position of this part of the machinery. Two or more thicknesses can thus be managed as well as one, while in some machines the under and upper pieces do not always move with exact uniformity. The upper piece moves more slowly than the lower, and the lining is either looser or tighter than the outside.

Mr. Pratt uses a single thread on the original spool, thus avoiding the labor of re-winding. The loop or chain is secured by a hook, but the action of that hook is not the same which is in use in some older machines.

Hand machines make about three hundred stitches per minute, while those moved by the foot will make about a thousand. Hence, though the hand machine costs but twelve dollars, and though it can do the work of three or four pair of human hands, the other form is more economical, while it costs $25 and $30, because it works so rapidly. Yet, for a small family, having but little work to do, the cheaper one may answer every needful purpose.

The arrangement of the machine can be changed so as to make five stitches to the inch, or forty, at pleasure, by turning a screw, and it will sew woolen, cotton or linen goods, with equal facility. Linen is, however, said to be the severest test of its working ability. It fastens its own thread when it stops, and thus prevents it from raveling.

We think this can not fail to prove a good family machine, and worthy of general attention. Our readers will remember that we have heretofore commended Robinson's as the best of all, because it takes different kinds of stitches, and exactly such stitches as are taken by a seamstress. But its machinery is comparatively complicate, and costs $100 and upwards. To those of small means, Pratt's machine commends itself both as cheap and capable of as good workmanship as any other of the high cost machines. When the sale becomes general, so that almost every family is accustomed to use them, the cost may be reduced still lower. But with present competition, and the great cost of giving publicity to any such invention by advertisements, agents, etc., probably the present terms are as favorable as can be reasonably expected. Mr. E. A. G. Roulstone, 7 Tremont street, Boston, has the right of this sewing machine, and an agency is established at New-York, 577 Broadway.

## Bradley's Sheep Shearing Machine.

A substitute for the "sheep shears," so long used in cutting off the fleeces of sheep, has been invented by Mr. R. P. Bradley, of Cuyahoga, O. Its cutters are after the fashion of our mowing machines, consisting of several fingers at the end of the implement, over which other moveable fingers slide. This slide is moved by a handle, and the zigzag motion is given by a zigzag slot, in which a pin, fastened in the slide, is inserted. It is guided by the left hand, and operated by the right. It may prove a very useful invention, but we have not seen it in operation.

## Renovating Worn Apparel.

To remove grease spots from silks and satins, use fresh ox gall, or pure turpentine, camphene or burning fluid. Camphene is purified turpentine, and burning fluid is a mixture of three parts of alcohol to one of champhene, and is perhaps the best of all these. To remove acid stains, apply an alkali, as ammonia, (hartshorn,) to the spot, very carefully. With some colors, ammonia will produce spots, hence it should be used sparingly, and applied only to the stain. Ink can be removed by being soaked or repeatedly washed in solution of tartaric acid, or oxalic acid, or salts of lemon. Woolen goods may be freed from grease by camphene, or burning fluid or alcohol, repeatedly applied, or even by soap, applied liberally and well rubbed in. The cloth must afterwards be thoroughly rinsed. Paint can be removed by camphene or burning fluid, repeatedly applied. Grease in a carpet may be removed by the same process, or by covering it with a considerable quantity of magnesia, which will gradually absorb the grease, and at least very much improve the appearance of the carpet. This process may require several days, and perhaps more than one application. Dry French chalk, or powder, upon a grease spot, will also absorb the grease, whatever the material to be cleaned, woolen, silk, etc. It must be applied liberally, remain a day or two, and be thoroughly removed afterwards by a brush, This is on the principle of absorption.

Ox gall may be prepared so as to be useful in this way, for an indefinite time, as follows: Take one pint of gall, boil and skim, divide into two parts. To one, add half an ounce of salt, and to the other, half an ounce of powdered alum, both being heated till everything is dissolved. Pour into separate bottles, and let them stand in a quiet place for six or eight weeks, or till bright. Then pour off the clear portions, and filter both through tissue or blotting paper into one vessel. In this state it will keep unchanged and free from odor.

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## Iron vs. Hemp.

Circumstances indicate that, in certain kind of steamers, iron will entirely supersede the use of wood as a building material.

Another use has also been made of it, to a limited extent, in its substitution for hemp, for standing rigging. Careful tests have been made recently, in Liverpool, in which the superiority of iron seemed fully substantiated. These tests had special reference to the comparative strength of wire, and of hempen rope. The following are given as the sizes and materials of the samples subjected to the first experiment, with the results: 3¾ inch galvanized wire rope, broke at 20 tons 15 cwt.; 3¾ inch Manila hemp, ditto, 5 tons 17 cwt.; 3¾ inch Russian hemp, ditto, 4 tons 15 cwt.; 3¼ inch galvanized wire rope, ditto, 16 tons 10 cwt.; 2½ inch galvanized wire rope, ditto, 8 tons 10 cwt.

How far these results may be counterbalanced in the matter of convenience, it belongs to experience only to decide. The Liverpool *Post* says, in reference to the superior strength of iron as shown in the above experiment:

"But from a table handed to us we perceive that this is not the sole, or indeed we might almost say the greatest, of the advantages it presents. For instance, we observe that wire rope is a fourth less in weight, and not one half the bulk of that made of the hemp of the relative strength and enduring capacity. The advantage of this, especially in beating to windward, needs no comment. Moreover, we are assured the cost is 25 per cent. in favor of wire rope over hemp, estimating weight and saving. Again, wire rigging is much less susceptible than hemp of atmospheric changes, the latter continually stretching. And when, in addition to all these advantages, it is remembered that wire rigging needs no stripping or refitting, as hemp rigging must have every few years, we can not but come to the conclusion that wire rope seems destined, ere many years, greatly to surpass, if it shall not entirely supersede, hemp rope in ships' standing rigging. Already, indeed, we see that for years it has been gradually creeping into more general use; and if the approval of experience can add, as it must, to the value of scientific tests, the use of it will be even more than proportionately rapid, for those who have used it invariably prefer it over hemp.

## Manilla vs. Hemp.

The experiments in Liverpool referred to as testing the comparative strength of iron and hemp, seem decisive as to the superiority of manilla over hemp, in various respects. It is not only stronger, but cheaper. It is lighter, runs more freely through blocks, and does not require tarring. The Boston *Post* says that the Americans were the first to demonstrate these facts, and also to show the superiority of machine spun over the hand spun fibre.

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## Perfect Intonation.

The *Economist* contains a short article informing us of an attempt to construct an organ capable of the same perfect correctness in all its keys and intervals as the violin, or the human voice. "The experiment," he says, "has been tried in the Enharmonic organ, and we have here a description of the manner in which it has been done." To us the history of that "enharmonic organ" is quite familiar. We were one of three who furnished the means for its ingenious inventor to go to work upon his favorite employment, organ building, although we did not employ him on the structure of that organ. We were not sufficiently impressed with its practibility or with the benefits which would result from it. All musicians know the imperfection common to organs and pianofortes, occasioning the differences between G♯ and A B, etc. The enharmonic organ has a separate pipe for each sharp and each flat, and ingenious machinery connects the proper series of pipes with the key. Thus the number of pipes is nearly doubled, the key board remaining unchanged. In the use of the instrument, the organist brings into play, by pedals, a different series of pipes, at each change of the key, so that its use requires a thorough knowledge of "Harmony," and not a little tact in promptly noticing and preparing for sudden changes in the character of the harmony. A description of this organ was given a few years since in *Silliman's Journal of Science*, the name of the original inventor being omitted, as is too often the case, while he who furnished the capital carried off the credit of the inventor. The real originator of that organ was a Mr. John Alley, who is still engaged, as we suppose, in the construction of instruments, at Newburyport, Mass. It is chiefly for the sake of connecting his name with this invention that we have written this paragraph. The value of the invention is another matter, about which different persons may not and do not agree, and subsequent generations may reverse the judgment hitherto pronounced on this point. But there is no question that "the enharmonic organ" produces sweeter harmony, especially in certain keys, and that an instrument of given sized pipes, constructed on this plan, produces more sound than does the common organ. The comparative silence which entervenes between the repetition of "the wolf," is unknown in the enharmonic organ, so that we have from its pipes a constant equal, smooth tone, at its loudest pitch. Practice with the enharmonic organ also raises a question of no little importance in the theory of music, viz., Is the seventh a discord? It is found that on this instrument the chord of the seventh produces no "wolf," while other "discords" develop the same phenomena as are produced upon the common organ.

### Ornamental Arts—Daguerreotypes.

If our readers turn to those numbers of our journal in which we described various articles exhibited in different departments, in the Crystal Palace, of the World's Fair, they will find that we announced the daguerreotypes of Masury & Silsbee, of Boston, as decidedly the best. The collection was large, and the contributors numerous, and even some of the latter expressed opinions on this point coinciding with our own. This is not the only case, however, in which we and others have come to results unlike those announced by officials, nor was it the only one in that exhibition. But we refer to this now, because a visit at their establishment in Boston, furnishes us with accumulative evidence on that subject. It seems to us impossible to produce more perfect pictures than are to be found by scores, in their rooms. The photograph and the ambrotype, are also exhibited in the same apartments, in the same excellent style, though we find that the latter are not regarded by these gentlemen as so well worthy of regard as other styles of this beautiful art. They say the pictures are not *artistic*, and in this opinion, we find that they are not alone. But we do not intend to form an issue on this question, with any one. Our present object is only to call attention to this firm, and to invite at least a passing examination of their work. Having once secured attention to this collection, we would have each one to determine for himself the time to be given to it, for we should not doubt the verdict that any one of ordinary judgment would arrive at by himself. Hence, we only say, drop in for a few moments.

## Recent Patents,

[ISSUED FROM THE U. S. PATENT OFFICE, FROM JULY 1 TO JULY 28, 1857.]

### Agricultural.

Machines for Husking Corn, G. W. Bachman, Clifton Springs, N. Y.—Grain Separator, Amasa Curtis, Lena, Ill.—Corn Harvester, Israel Dodenhoff, Bloomington, Ill.—Cutting Apparatus for Harvesters, Joseph Irwin, Frankfort, O. Spiral cutters in combination with curved cutting fingers.—Machine for Husking Corn, Wm. Emery, Jr., Chester, Ill.—Connecting the Panels of Field Fences, S. F. Jones, Milford, Ind.—Cutting Apparatus for Harvesters, John P. Manny, Rockford, Ill.—Scroll Wheel for Harvesters, C. D. Rogers, Utica, N. Y.—Hay Rake, S. W. Wood, Washington, D. C., assignor to Lewis H. Parsons, New-York. —Cultivating Ploughs, George G. Black, Crossinville, O. A double plough, with two beams, joined at the clevis, and adjustible to different widths.—Harvester, John P. Manny, Rockford, Ill.—Churn, Charles H. Dana, West Lebanon, N. H.—Corn Planter, Alvin Franklin, Genoa Cross Roads, O.—Churn, Silas Hewett, Seneca Falls, N. Y.—Cultivator, Howard Mann, San Francisco, Cal.—Raking Apparatus for Harvesters, John P. Manny, Rockford, Ill.—Draining Machine, A. P. Routt, Somerset, Va.—Cultivator, Henry Schreiner, Jr., Berrysburg, Pa.—Machine for Planting Potatoes, Gatusha J. Bundy, Lyndon, Vt.—Rotating Harrow, James B. Glascock, Fancy Creek, Ill.—Corn Harvester, G. D. Haworth, Mechanicsburg, Ill.—Shovel Handle, George C. Howard, Hardwich, Mass.—Corn Planter, Norman A. Lewis, Glenn's Falls, N. Y.—Garden Hoe, Solomon Shutter, Alleghany, Pa.—Cotton and Cane Cultivator, T. E. Shannon, Woodville, Miss. A series or gang of cultivators in combination with a wheel carriage.—Straw-cutters, J. L. Sullivan, Lexington, N. C. Two sets of knives, rotating at right angles to each other.—Grain Separator, Wm. Zimmerman, Quincy, Ill.—Machine for digging potatoes, Joseph Heulings, Philadelphia, Pa., assignor to W. H. Lawson, B. M. Heulings and Joseph Heulings, of do.—Cleaning Rice, Philip R. Lachicotte and T. B. Bowman, Charleston, S. C.—Guard Fingers for Harvesters, A. R. Reese, Phillipsburg, N. J.—Corn Planter, Charles Schnepf, Lancaster, Pa. Semi-circular scooping hoes, with jointed ends, in combination with slides, and operated by revolving levers.—Cultivator, Harrison Ogborn, Greensfork, Ind., and George Taylor, Richmond, Ind., assignors to Harrison Ogborn.—Machine for trimming hedges, William Wimmer, Billingsville, Ind.

### Metallurgy.

Metal Separator, Edward Borlase, Bristol, Conn.—Machine for tapping nuts, A. B. Glover, Birmingham, Conn. - Wrench, J. H. Hathway, Millbury, Mass.—Lock, Henry Isham, New-Britain, Conn.—Goldwasher and Amalgamator, T. V. Tavnay, San Francisco, Cal.—Bit or Drill Holder, Amos J. Smith, assignor to himself and George W. Otis, Lynn, Mass.—File Cutting Machine, Wm. Van Arden, Poughkeepsie, N. Y.—Machine for gaging and filing saws, Emanuel Andrews, Elmira, N. Y.—Nail Plate Holder, Wm. H. Battell, Newcastle, Pa.—Coal Tar in iron furnaces, Isaac F. Johnson, Spuyten Duyvil.—Lock, L. F. Munger, Le Roy, N. Y.—Machine for cutting metal, James Tetlow, Salem, Mass.—Centering Machine, E. J. Whiton, West Stafford, Conn.—Lock, Wm. Whiting, Roxbury, Mass., and Henry Pickford, Boston, Mass.—Hand Wrench, G. Philips, Albany, N. Y.—Locking Cylindrical Door Bolt, C. G. Page, Washington, D. C.—Tempering Scythes, C. P. Crossman, Warren, Mass.—Shell Roller, bed for planing machines, Geo. Darby and James E. Young, Augusta, Me.—Seaming Sheet Metal Roof, Lucian Fay, Cincinnati, O.—Punching and Shaping Metals, George Hazeltine, Washington, D. C.

### Fibrous and Textile Fabrics.

Pasteboard Cutter, D. Burhaus, Burlington, Iowa. Of two cutters, each cuts half way through, and avoids the rough edge of former machines.—Cutting button-holes, Wm. Chicken, Boston.—Sewing Machine, E. T. Lathbury, Buffalo, N. Y.—Mattresses, Wm. P. Ford, Cheneyville, La.—Rope Machine, Ezekiel Guile, St. Louis, Mo.—Hemp Drawing Machine, Samuel Loundes, Brooklyn, N. Y.—Cotton Gins, Daniel Pratt, Prattville, Ala.—Machine for cleaning cotton, L. S. Chichester, assignor to Henry G. Evans, New-York.—Sewing Machine, Abram Bartholf, New-York.—Machine for manufacturing felt cloth, Thomas B. Butler, Norwalk, Conn.—Tension Apparatus for Sewing Machines, Abraham Hoagland, Jersey City, N. J.—Treating Paper Staff, J. A. Roth, Philadelphia, —Hemp Brakes, Stephen Stafford, Carrol Co., Mo.—Stuffing horse collars, J. C. Tobias, Lincoln, Ill.—Fastenings for carpets, Washington H. Penrose, Philadelphia.—Crane, R. E. Schroeder, Rochester, N. Y.

### Chemical Process.

Alcohol Blow Pipe, Edward Conway, Dayton, O.—Making acid bi-sulphite of lime, Laurent Gamotis and Sabin Martin, New-Orleans, La.—Retort Covers, J. R. Floyd, assignor to T. C. Kibbe, New-York.

### Calorifics.

Cooking Stove, Wm. Resor, Cincinnati, O.—Air-Heating Stove, Charles B. Sawyer, Fitchburg, Mass.—Gas Stove, Patrick Mihan, assignor to Robert B. Fitts, Boston, Mass.—Same, Thomas Watters, Boston.—Bagasse Furnace, Geo. M. Lingacre, New-Orleans, La.—Railroad Car Stove, James Spear, Philadelphia.

### Steam and Gas Engines.

Packing of Pistons, George H. Hoagland, Port Jervis, N. Y.—Governor of Steam Engines, etc., A. F. Ward, Louisville, Ky.—Spark Arrester, Henry H. Graham, Paterson, N. J.—Same, J. F. Page, assignor to himself and Jas. Landy, Philadelphia.—Governor for Engines, Frederick W. Howe, Newark, N. J.—Spark Arrester, Ethelred May, Boston.—Valves and passages to the cylinders of steam engines, John A. Reed, Jersey City, N. J.—Oscillating steam engines, John Wallace, Pittsburgh, Pa.—Governor, Nathan Scholfield, Norwich, Conn.

—Rendering joints steam-tight, Wm. S. Gale, assignor to Peter Poillon, New-York.—Regulating the fire of coal burning locomotives, John M. Hartnett, Waukegan, Ill.

NAVIGATION AND MARITIME IMPLEMENTS.

Steering Apparatus, D. H. Chamberlain, W. Roxbury, Mass.—Rigging of ships, James E, Cole, Brooklyn, N. Y.—Marine Canal, Thomas Bell, New-York. —Stopping Shot-holes in vessels, John Woodville, Chillicothe, O.—Raising sunken vessels, John Ponton, New-York.

CIVIL ENGINEERING AND ARCHITECTURE.

Truss Bridge, Josiah Brown, Jr., Buffalo, N. Y.—Box Window-frame, J. B. Dodge, St. Louis, Mo.—Sash Lock, Marcus P. Norton, Troy, N. Y.—Segmental Truss, for Bridges, etc., Geo. S. Avery, Lewisboro', N. Y.—Pendulum Level, Calvin Cole, Tarrytown, N. Y.—Mastic Roofing Composition, Samuel K. Lighter and James A. Morrell, Hamilton, O.—Spindle for door knobs, Orrin Newton, Pittsburgh, Pa.—Gate Latch, A. E. Morgan, assignor to himself, David Todd, and H. Waddle, Poughkeepsie, N. Y.—Sash Fastener, F. Tarbell, assignor to himself and D. C. Bicknell, Boston.—Roofing Composition, J. B. Wands, Chicago, Ill.

LAND CONVEYANCE.

Upsetting Tires, Rockwell Hazen and Volney Gibbs, Homer, Mich.—Whiffletree, David A. Smith, Washington, D. C.—Applying railroad car brakes, Ira J. Webber, Salem, Mass.—Machine for making railroad chairs, Robert Arthur, Richmond, Va.—Fly Wheel to Hand Cars, Charles T. Kipp and John Lawrenson, New-York.—Seal for car doors, etc., D. W. Long, Baltimore, Md.—Freight Cars, Henry D. Mears and Wm. Houlton, Jr., Baltimore, Md. (Two patents,) covering the seal and the manner of defending it from accidental or designed injury.—Carriage, Rufus Nutting, Randolph, Vt.—Car Seats, B. J. Lamothe, New-York.—Railroad Car Coupling, Wellington Prosser, Kendall, N. Y.

HYDRAULICS AND PNEUMATICS.

Air chamber for water-pipes, Thomas Clark, Philadelphia.—Pump, Henry Pease, assignor to Eckler, Baswell & Co., Brockport, N. Y.—Pump, Birdsill Holly, assignor to Silsby, Mynders & Shoemaker, Seneca Falls, N. Y.—Governor for wind-mills, etc., Ethan Allen, Worcester, Mass.

MECHANICAL POWERS.

Lifting Jack, Heber G. Seekins and Charles H. Goss, Elyria, O.

GRINDING MILLS, AND MILL GEARING.

Shaft Coupling, Edwin F. Schoenberger, Germantown, Pa.—Belt shifter for machinery, L. J. Knowles, Warren, Mass.

LUMBER, AND TOOLS AND MACHINES FOR PREPARING IT.

Device for securing the stock to the guide-rods of joiner's planes, Stephen Going, New-York.—Straightening Veneers, J. H. Goodell, Bridgeport, Conn.—Operating radical cutters in lathes for beaded work, Geo. W. Walton and Henry Edgarton, Wilmington, Del.—Bit Brace, Henry W. Porter, Rothsville, Pa.—Automatic Lathe, Alexander Edmonds, Mt. Pulaski, Ill.—Mortise Boring Machine, Hiram E. Paine, Troy, N. Y.—Adjusting Tenon Cutters, Melyn Weatherington, Springfield, O.—Cutting Tenons, W. H. Harrison, Philadelphia. The use of two circular saws, whose planes are at an acute angle to each other on the same shaft.—Sawing-Mill, Wm. M. Ferry, Jr., Ferrysburg, Mich.—Feed rollers of planing machines, etc., Jona. Hall, Worcester, Mass.—Sawing Mill, Franklin B. Kendall, Bath, Me.—Method of turning carriage hubs, Alexander Rickhart, Schoharie, N. Y.—Feed for Sawing machines, Thomas J. Alexander, Westerville, O.—Driving Circular Saws, Thomas J. Alexander, Westerville, O.—Lathe for turning irregular forms, Samuel N. Baker, New-Haven, Conn.—Auger Handle Fastening, Wm. N. Clark, Chester, Conn.—Sawing and dressing staves, Elisha K. Collins, Cambridge, Mass. For sawing, jointing, dressing and shaping staves at one operation.—Mortising Chisel, Christian J. Heistand, Rapho, Pa.—Mortising and Boring Machine, J. M. Jay, Canton, O.—Bit brace for boring obliquely to the stock, Charles C. Plaisted, Chicopee, Mass.—Shingle Machine, E. Webber, Gardiner, Me.—Feeding the bolt in Shingle machines, Wm. Wood, Westport, Conn.

LEATHER, TANNING, ETC.

Tanning Composition, Ira Carle, Kingston Township, Pa. Hemlock or oak bark, nitric acid and Glauber's salts, all to be used in one bath.—Edge Plane, for boot and shoe soles, Charles Warren, Putnam, Conn.

HOUSEHOLD FURNITURE.

Washing Machine, Adam Fisher, Leavenworth City, K. T.—Bureau Bedsteads, Ethan Whitney, Boston, Mass—Fixtures for curtain rollers, Lewis White, Hartford, Conn.

ARTS, POLITE, FINE, AND ORNAMENTAL.

Backing Electrotype Plates, A. H. Jocelyn, New-York.—Metallic Pens, F. A. Wait, Philadelphia.—Embossing and Printing Press, Samuel J. Smith and Charles Loekle, New-York.—Melodeon Attachment, D. L. Sprague, Townsend, Vt.—Harp attachment, played by a series of hammers, moved by the same keys that play the reeds.—Pen and Pencil Case, Edward Baptis, Hudson, N. J.—Piano Forte, G. Henry, Hulskamp, Troy, N. Y.—Breast Pin, John F. Mascher, Philadelphia.—Wrest Pins for Pianos, Gustav Schilling, Hoboken, N. J.—Inking Rollers, E. E. Barrett, Chicago, Ill—Metallic Bridge for piano-forte, G.H. Hulskamp, Troy, N. Y.—Photograpy, H. A. Marchant, assignor to E. D. Marchant, Philadelphia.—Fastening breast pins, Charles F. Kobb, Philadelphia.

FIRE ARMS, &c.

Self-priming gun locks, M. J. Gallager, Savannah, Ga.—Shot Cartridge, Wm. B. Johns, U. S. Army.—Projectiles and smooth bored guns, John L. McConnell, Jacksonville, Ill.—Revolving Fire arm, James Warner, Springfield, Mass.—Fuze-making Machine, Albert F. Andrews, Avon, Conn.

SURGICAL AND MEDICAL.

Fastening Artificial Teeth, Theodore H. and Jas. P. Bradish, Utica, N. Y.—Pill Machine, James C. Ayer, Lowell, Mass.—Artificial Legs, R. H. Nicholas and Douglas Bly, Rochester, N. Y.

MISCELLANEOUS.

Dry Sand Cores, Wm. Gage and R. B. Felthousen, Buffalo, N. Y.—Paper Cap-tubes, Alexander McCausland, Providence, R. I.—Covering for Drawing Rolls, Jas. M. Smith, Manchester, N. H.—Rock Drilling Machines, Lemuel P. Jenks, assignor to George A. Gardner, Boston.—Same, Lemuel P. Jenks and George A. Gardner, assignors to George A. Gardner.—Device for sealing bottles, cans, etc., Mills B. Espy, Philadelphia.—Self-setting Trap hook, Donald McLean, Boston.—Lime Kilns, Leonard Phleger, Philadelphia. The use of a series of water cells, for supporting the lime.—Fly Trap, W. F. Shannon, Greensboro, Ga.—Oil Cans, George W. and George H. Simmons, Bennington, Vt.—Signal and Alarm Bells, George Hoagland, Port Jervis, N. Y.—Hog Troughs, Elmore Johnson, Winchester, Mass.—Diaper pins, J. Heilmann, assignor to Ignatius Sturn, New-York.—Smut Machine, Everard M. Clark, Lancaster, Pa.—Mop Head, James S. Harris, East Poultney, N. Y.—Lime Kiln, John McGregor, Selma, Ala.—Same, Clark D. Page, Rochester, N. Y.—Drilling Rock, M. F. Rowlands, Pittston, Pa.—Receiving boxes for passengers' fares, J. B. Slawson, New-Orleans, La.—Brick Machine, Stephen Ustick, Philadelphia.—Locking cylindrical door bolts, Charles G. Page, Washington, D. C.—Paring and Slicing Apples, R. W. Thickens, Brasher Iron Works, New-York.

# Recent Foreign Inventions.

IMPROVED VALVE COCK—BEING A COMMUNICATION. WILLIAM WEBSTER, of Bunhill-row.

This invention relates to an improved mode of working the valves of valve-cocks, and consists in having a screw-thread cut upon the lower end of the valve stem, such screw working through a fixed nut on the under side of the cock; or in having a hole with a screw-thread formed in it, made inside the valve-stem in the direction of its axis, in which works a screw spindle, fixed to or made in one piece with the fixed nut hereinbefore referred to—the valve being opened or closed by turning the valve-stem or spindle by any of the usual contrivances.

IMPROVEMENT IN THE MANUFACTURE OF IRON AND STEEL. HENRY BESSEMER, of Queen-street-place, New Cannon-street.

This invention consists in obtaining crude or grey pig iron, hard white iron and steel, or malleable iron, direct from carbonaceous iron ores, or from any mixture of carbonaceous ores, with oxides or other ores of iron, by the application thereto of a blast of hot or cold air or steam, or of any other gaseous matter containing or capable of evolving oxygen or hydrogen gas, and without requiring any fuel except such as is contained in or is evolved from the ores of iron, and from the gaseous matters forced into and among the pieces of ore, and into and among the particles of fluid metal which have been separated from the ore.

The iron ore, either raw or previously roasted, and in a cold or in a heated state from such roasting process, is to be put from time to time into the upper part of a blast furnace. The blast of air or other gaseous matter is forced through suitable tuyeres situated below the surface of the fluid metal, or it may be in part directed into and among the pieces of ore at a level above the surface of the molten metal.

In carrying out this system of fusing the carbonaceous ores of iron, one or more fire-clay tuyere pipes are inserted on three sides of the hearth of the furnace, the fourth side being provided with a tapping hole at the lowest level of the hearth—the tuyeres, before referred to, being placed, by preference, near to the bottom or sole of the heart, so that the air or other gaseous matters may enter beneath and bubble up through the fluid matters occupying the hearth of the furnace. Other tuyeres are also fixed above the level of such fluid matters; so that the air or other gaseous matters propelled through them will enter among the masses of solid matter under operation, consisting of pieces of carbonaceous iron ores and lime, or other fluxes used to assist in their fusion, and in giving fludity to the molten materials. In thus forcing air into a furnace or vessel containing ores of iron rich in carbon, it will be found that a very high degree of temperature will be produced in part by a further combination of such carbon with the oxygen of the air, and in part by other combinations of oxygen with combustible materials contained in the iron ore, and that the solid masses of ore will, by means of the heat so generated, pass from the solid to the fluid state, and settle down to the lower part or hearth of the furnace. The temperature of the furnace may also be assisted by the introduction of hydrogen, which, by uniting with the oxygen present in the materials, will also assist in raising the temperature and in the reduction of the metal. Hydrogen for this purpose may be most advantageously obtained in the form of carburetted hydrogen gas distilled from coal. When using air alone, large quantities of fluid cinder, rich in oxide of iron, are produced, and may be run into another chamber; and solid carbonaceous substances or carburetted gases may be forced into and below the surface of such liquid cinder, whereby the oxide of iron will become reduced and metallic iron formed, as described in a patent of the present patentee, bearing date the 19th of August, 1856.

The fluid iron may be cast into pigs, ingots, or other articles in molds; or it may be run into a separate vessel, and be there converted into steel or malleable iron, in the manner described in the specification of a patent granted to the present inventor on the 12th day of February, 1856.

In commencing to work, some coke is put into the crucible or hearth of the furnace, and by a blast of air through the tuyeres the same is thoroughly ignited; some pig iron is then placed on the coke, and it will rapidly melt and sink down on to the sole of the hearth. The furnace is then charged with carbonaceous iron ores and lime or other fluxes, not mixed, as in the ordinary process, with coke, coal, or other fuel; the lower tuyeres may then be opened, and a blast of air allowed to enter the molten iron. The intense heat produced, acting on the iron ore, will cause its fusion, accompanied by a further evolution of heat; and thus the process may be kept up, the charging on of materials going on as the charge diminishes from below; so that a continuous fusion of the ore may be kept up without the use of any fuel other than is contained in the ore and in the air or other gaseous matters forced therein.

Improvements in Ornamenting Glass, and in the Preparation of the Materials employed therein. William Wilkinson, of Nottingham.

This invention consists, firstly, in interposing figured designs, pictures, prints, lace, and other textile fabrics, and ornamental and other devices (which are rendered transparent or not) between two sheets of glass, whereby the device may be apparent on the face of either sheet.

Secondly, in rendering engravings, prints, and other designs upon paper transparent, by first soaking the paper in linseed or other suitable oil or oleaginous matter, then drying it and immersing it in turpentine or spirit; or the same design may be printed on both sides of a sheet of paper and placed between the surfaces of glass. The print is attached by transparent cement to one of the surfaces, and then to the edge of the glass a narrow strip of tape is cemented, and the remaining plate of glass is applied thereon. The two plates of glass are finally secured by India-rubber, gutta-percha, or a thin metal clamp or frame; or the edges of the plates are united by melting the same by means of a blow-pipe. In order to add to or increase the effect of the printed design, at the back of one of the sheets of glass is placed a glass case containing water. This case may be formed in a piece with one of the sheets of glass ornamented as aforesaid, or it may be formed separately and be applied thereto.

This invention consists, thirdly, in the application of prints and engravings made transparent as aforesaid to the inside of glass globes and shades.

Fourthly, the invention consists in cementing a piece of paper, made transparent by oil and turpentine, as above-mentioned, upon a piece or sheet of glass; then printing a design upon it in a lithographic or other suitable press; in applying thereon another plate of glass; and in sealing the two plates, as before mentioned.

Fifthly, the patentee forms bottles and other vessels of capacity, of two thicknesses of glass, and interposes any device between the two thicknesses. In order to add to the effect, the outer surface of the outside is made plain, and any desired device is formed on the inner surface of the outside coat, or on the outer surface of the inner coat, whereby both the inside and outside of the bottle will be smooth, and thus be easily cleaned, and offer no inequalities of surface to catch the dust, etc.

The manner of laying on colored engravings or prints between glass in order to ornament the same, is as follows: Over the face of the engraving is laid a wash, composed of linseed or other suitable oil, spirit of wine, turpentine, or other spirit, and the engraving is then placed face downwards on a sheet of glass, previously brushed over with spirit of wine or turpentine. When the engraving is thus fixed on the glass, a mixture of oil and spirit is applied to the back thereof until the engraving becomes distinctly visible. A corresponding sheet of glass, with white lead or paste round all the edges, is next laid evenly on the first sheet. The prepared engraving being interposed, the two sheets of glass are pressed firmly together, and retained by a metal clamp round all the edges, or by gutta-percha, or by other suitable means.

If a glass is desired to be ornamented, and to be placed against some opaque object, then the second sheet of glass becomes unnecessary; and directly after the engraving has been applied on the glass, as before described, it may be let into a panel or otherwise, or may be let into a metal or other frame or dish. Glass, ornamented as aforesaid, let into metal dishes, would form a highly ornamental and fire-proof floor.

In the case of oil engravings, such as those known as "Baxter's," white lead or paste is placed evenly upon a sheet of glass, and the back of the engraving is pressed thereon—then round the edges of the glass a layer of cement is applied to receive the second sheet of glass; or a thin strip of metal, gilt or otherwise, is interposed between the edges of the two sheets of glass. The outer edges of the two sheets of glass are held together by metal clamps, or by a metal or other frame. Glass ornamented in this manner may be made to form the whole or part of the tops of tables, boxes, etc.

Instead of paper, perforated metal or wire gauze, painted, embossed, or otherwise, is placed between two sheets of glass to form window blinds.

Improvements in the Preparation of Size, which may be used as a waterproof varnish or coating. William Septimus Losh, of Wreay Syke, Cumberland.

This invention consists in preparing from resin, resins, or stearine, or a mixture of the two, a substance or substances suitable for sizing or water-proofing purposes.

The inventor, first, prepares a solution of caustic soda or potash (by preference soda) by boiling carbonate of soda or potash with about equal weights of lime and a large quantity of water—about 100 gallons of water to 1 cwt. of dry soda or potash. This is effected in an iron vessel, heated by driving in steam from a boiler. After boiling about two hours the lime is allowed to settle, and the clear solution is ready for use. Into another iron vessel he puts the resins or stearine to be acted upon, and takes as much of the clear alkaline solution, prepared as aforesaid, as is required to render the resins or stearine soluble. It is found that 1 lb. of dry soda or potash answers for 6 lbs. of resin or stearine—but more or less may be used. The mixture is boiled by steam for about 6 hours, and then allowed to cool, and about 100 gallons of water are added to each cwt. of the resin or stearine solution. This is then filtered carefully through cotton cloth, to remove any insoluble dirt, etc., and to the filtered solution chloride of lime, also in solution, is added, in the proportion of about 1 lb. of dry chloride of lime to 20 of resin or stearine. This mixture, which forms a white insoluble precipitate, is then washed with an acid solution, or alum solution, and afterwards with clean water, and filtered; the substance thus obtained is in this state fit for use as a size. When using it in sizing paper, it is added to the paper pulp, with or without the addition of ammonia, in the beating engines, by which means it becomes well mixed with the pulp. By mixing ammonia with the prepared size, in the proportion of, say 1 part of ammonia to 500 parts of size, it becomes more equally mixed with the pulp.

When the size, prepared as above described, is to be used as a varnish, it must be dissolved in a spirit, or essential oil, or naphtha, or rendered viscid by ammonia. When used as a coating, it may be spread, with or without the addition of ammonia, evenly on the surface to which it is to be applied, and passed upon such surface through heated or cold rollers, or be otherwise submitted to hot or cold pressure.

Improvements in Agricultural Drills. Thomas Chambers, Jr., of Colkirk, Fakenham, in the County of Norfolk.

This invention has for its object improvements in agricultural drills, with a view to deposit at intervals in place of continuously, and the same is applicable when drilling seeds and liquid manures, and also when drilling seeds, water, and manure. For these purposes there is applied a rotating hollow wheel or chamber to each channel or furrow made by the drill. The rotating hollow wheel or chamber has spouts or passages at intervals at its periphery. The seed and liquid manure, or the seed, water, and manure, are delivered into the interior of the rotating wheel or chamber from the separate compartments of the drill containing them, and they are retained from flowing out from the wheel or chamber, except when, by the rotation of the hollow wheel or chamber, a spout or outlet comes to the ground. The axis of the rotating wheels or chambers may receive motion by wheels thereon, which run on the land, and the running wheels may be made to expand and contract, to vary the distance at which the deposit takes place from the spouts or outlets, or the axis may receive motion by gearing from the drill.

An Improved Method of or Apparatus for Inking, Printing or Stamping Surfaces. Charles William Lancaster, New Bond street.

This invention consists in mounting an inking roller upon an arm or lever in such manner, that when the stamping or printing surface is at rest, the roller is held clear thereof, and that when the printing surface moves, it acts upon the lever, presses it back, and causes the inking roller to traverse over and ink the printing surface. Upon the printing surface resuming the position from which it started, a spring draws the lever and roller to their original position, and causes the inking roller in its course to travel a second time over the printing surface.

## Mills Stopped.

The number of cotton looms that have been stopped in New-England, in consequence of the high price of cotton and the low price of goods, is about six thousand, and orders have been given to stop many more, as fast as the yarn runs out. We heard, yesterday, of two large mills that will run only till the cotton now in process of manufacture is exhausted. This is the only remedy. We talk of the short supply of cotton. The evil is not there; it is the over supply of cotton machinery. The looms now in operation are not only too many for the supply of cotton; they are too many for the demand for cotton goods at anything like the prices which alone, at the present cost of the raw material, can return a new dollar for an old one. In England thirty thousand looms have been stopped, and prices have quickly responded to this judicial curtailment of production.—*Providence Journal.*

## Copper in the Sea.

Experiments are now in progress to show that the sea is constantly charged with a solution of copper. Mr. Septimus Piesse caused a bag of iron nails to be hung from the sides of steamers passing between Marseilles and Nice, and obtained a precipitation of copper upon the iron. He finds the same metal in the substance of animals inhabiting the sea, and recommends the popular experiment of putting an oyster— a *bad one*, if possible—on the blade of a knife, and leaving it there for twenty-four hours, when, on the removal of the oyster, the copper will be found on the knife. In Mr. Piesse's opinion, the beautiful blue color of some portions of the Mediterranean is due to an ammonical salt of copper, while the greenness of other seas is owing to the chloride of copper.

## The Mechanics of this Number.

On account of the absence of the junior editor in New-England, this department of the present number is not quite full. It is difficult to supply such matter, exactly fitted to a pattern, either in quantity or quality, while absent from home. But we present a few matters of special importance, and will endeavor to make amends hereafter for all present deficiencies. Our future numbers will contain more of original inventions, than we have lately been accustomed to present to our readers.

# THE FAMILY CIRCLE.

## Scientific.

### Chemistry for the Million.

Having before given the names and a brief description of the more abundant elements in nature, the compound resulting from these will next claim our attention. The figures prefixed denote the proportions of each ingredient and of the compound. Thus, read the first;—8 lbs. of oxygen, combined with 1 lb. of hydrogen, form 9 lbs. of water; and so the others, putting "combined with" after the first word in each line, and the word "form" after the second.

8 OXYGEN 1 HYDROGEN 9 WATER.

Water with other substances forms *hydrates*, as hydrates of lime, of iron, etc.

16 OXYGEN 6 CARBON 22 CARBONIC ACID.

Carbonic acid forms Carbonates, as Carbonate of Lime, (chalk, marble, lime-stone,) Carbonate of Soda (washing soda,) bi-carbonate of soda, (cooking soda) etc.

14 NITROGEN 3 HYDROGEN 17 AMMONIA.

The three compounds above, water, carbonic acid, and ammonia constitute a very large part of the food of all growing plants. Nothing could grow if deprived of either of them. Decaying plants and animals are always giving them off; and living, growing plants are always receiving them.

*Water.* The reader will see by the table above that this liquid is composed of two gases, oxygen and hydrogen. The first is the cause of all combustion; the second is one of the most inflammable substances in nature; and yet the liquid composed from them is the great extinguisher of flame. Oxygen is a little heavier than air; hydrogen is fourteen times lighter than air; and yet water composed from them weighs about 63 lbs. to the cubic foot.

The laws by which water is governed ought to be understood by all. 1st. It is perfectly fluid at ordinary temperatures—seeks its level, and will obtain it perfectly if no disturbing forces operate to prevent—will rise as high in the spout of the tea-kettle as it stands in the kettle itself, as high in the penstock as in the fountain, and as high in one part of the broad ocean as in any other part, so that, measuring from the center of the earth, every part of the surface will be equi-distant from that point.

2. As water cools from a high temperature, say from the boiling point, it diminishes in bulk, till it comes down to about 39° Farenheit. It then, contrary to the general law, that bodies shrink as they cool, expands gradually till it comes down to the freezing point, 32°, where it suddenly expands and crystalizes into ice. This expansion below 39° is the cause of ice being lighter than water, so as to remain on the surfaces instead of sinking. By remaining on the surface it protects the water beneath from the cold air, and prevents freezing more than a few inches, or at most a few feet in thickness. Whereas, if it sunk to the bottom, the surface would freeze and sink successively, till the whole mass of our rivers, lakes, and even the ocean itself, in the polar and temperate latitudes, would become solid bodies of ice during winter, and would not dissolve sufficiently soon on the return of the sun to admit of vegetation, by reason of the chill that would be produced on the atmosphere. Nothing more strikingly illustrates the wisdom and goodness of the Great Author, and the constant executor of nature's laws.

3. When water is heated, it gradually expands from 39 degrees upward, enlarging its bulk so slowly as not to be perceived except by the use of nicely constructed vessels, until it reaches 212°. At this point it turns into steam, of which every drop of water gives a bulk 1700 times greater than its own. When a kettle of water over the fire comes to 212°, the boiling point, where it begins to form steam, all of it would pass into steam at once with a violent explosion but for one reason, and that is, that when water changes from a solid to a liquid state, and then again when it changes from a liquid to a vaporous state, it takes heat from the surrounding objects. Every one must have noticed that when snow melts it chills the air, and when it begins to freeze it warms the air. When it consolidates, it gives heat to surrounding bodies, and when it liquifies it takes heat from surrounding bodies. So when it turns from vapor to a liquid state it gives out heat, and when it changes from a liquid to a vapor, or steam, it takes in heat—steals heat, so to speak, from every object near it. You heat water to 212°. The first particle of steam that goes off takes away heat from the water that is left, and so between the stealing away of heat above by the departing steam and the infusing of heat by the fire below, the temperature remains at 212°, whether you have little fire or much. If the water is open and uncompressed, you can not heat it above that point, and if you have but very little fire, it will not fall below. The more fire you make, the faster the steam passes off; but the faster the steam passes off the faster it carries off with it heat from the water left behind. If it were not for this it might be as dangerous an operation to convert a kettle of water into steam as to explode one filled with gunpowder. At 212° the expansive force of water—its tendency to fly off in steam—is 15 lbs. to the square inch, but as the pressure of the atmosphere is 15 lbs. to the inch, the one just balances the other. If you could heat it, when open and uncompressed, above 212°, the expansive force would overbalance the aerial pressure and there would be an explosion. But we have seen that this is impossible—that it can not be heated above 212°—because the steam passing off the instant it would rise above that point, takas away heat precisely as fast as the fire infuses it.

We have considered the facts of the fluidity of water from 32° to 212°, of its solidity below the former point, and of its gaseous, or vaporous state, above the latter. We desire the reader to impress on his mind the facts that, when water changes to ice it gives out heat, imparting it to surrounding objects, and that when it changes back to water it absorbs heat, taking it from all bodies near, and thus producing a chill; also that when it changes to steam it absorbs still more heat than when it passes from ice to water, taking it from any body near, but mainly from the water which it leaves behind yet unevaporated. If it evaporates from the surface of the ground, then it takes its heat from the ground itself. There is no more prolific cause of cold, unproductive soils, than the evaporation of undue amounts of water from their surface. As the hottest fire will not heat an open kettle of water above a certain point, because the evaporation from the surface carries off heat as fast as the fire infuses it, so the sun can not heat a soil saturated with water, because the evaporation carries off the heat, which the sun would otherwise infuse in the soil.

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## Insects Injurious to Vegetation.

#### INSECTS INJURIOUS TO THE ORANGE TREE.

We avail ourself again of the careful observation, and minute and reliable statements of our friend Mr. Glover, in relation to insects found in the South. And here we may be permitted to say that we regret very much that our learned friend has resigned his position in this department of the Patent Office. His peculiar genius is admirably fitted for such duties, and his retiring will cause a void not easily filled. His models of fruit, and the reports from which we gather what follows and the substance of our last chapter on this subject will bear perpetual testimony to his industry and skill. But we must proceed with our subject, and we first describe,

THE ORANGE-SCALE.—*Coccus?*

The insect which has been so destructive to the once flourishing orange-groves of Florida presents the appearance of a minute, narrow, elongated scale, with a narrow semi-transparent, whitish margin. That of the female resembles one of the valves of a long muscle-shell, in shape, and adheres closely to the leaf or branch on which it is fixed, and is apparently formed by successive semi-circular layers added from time to time. When fully grown, it measures about the tenth of an inch in length, by about the fortieth part of an inch in breadth, at the broadest part.

The young insects are produced from eggs deposited by the female under the broader end of the outer case, or shell; and, when first hatched, are furnished with six legs, by means of which they escape from under the maternal shelter, which is somewhat elevated from the leaf, at the hinder part, to allow the egress of the young, which are extremely small, and appear in numbers, like minute, yellowish specks upon the leaf; but, if magnified, the six legs, two antennæ, and two short bristles, at the end of the abdomen, can be plainly distinguished. The body is of a pale-yellowish color, and divided into segments.

When tired of rambling, and having arrived at a suitable place for feeding, the cocci fix themselves to the leaf, or branch, for life. A light-colored, semi-transparent film, or case, with two projecting points at the narrow end, is soon formed over the young insect, and under this thin scale, it may at first be plainly perceived. The scale gradually increases in size, and becomes more opaque and brown, until the shell of the female attains its full growth, at which time it measures about the tenth of an inch in length. If the large scales are taken from the leaf, the female larva, or worm, may be seen in the concavity of the scale, in the same manner as an oyster or muscle, rather in the concave valve of its shell. This grub is of a yellowish, or sometimes pink color. The case itself, when turned upside down, appears to have a narrow margin of a whitish, or semi-transparent substance, where it had adhered to the leaf; a flat flap, or wing, extends on each side from the head, or narrowest end, at least two-thirds down the shell. This appears also to have adhered to the leaf. A longitudinal opening is left between the two projecting pieces, where the naked body of the grub may be seen. The end towards the thicker extremity, is often vacant until filled with eggs, which, in color, are yellowish or pink. The head of the grub is placed towards the narrow part of the scale, and a piercer, or thread-like filiament, proceeds from the under part of the breast, by means of which it sucks the juices from the plant. If the scale is gently removed from the leaf, it will often be found to hang to it by means of this thread-like piercer.

When the female commences to lay her eggs, under the shelter of the scale, they appear to be deposited in parallel rows on each side; but it is difficult to ascertain their number correctly. As many as twenty or thirty, however, have been counted in one female scale. The female decreases in size in proportion to the number of eggs laid, and finally, after having deposited all under the scale, she dies and dries away in the smaller end, with the case still adhering to the leaf. The scale of the male is much smaller than that of the female. The grub inside, after changing in a pupa, of a yellow color, with rudiments of wings, legs, and antennæ, eventually emerges from the case a perfect two-winged fly, so extremely minute as to be scarcely perceptible to the naked eye.

The head of the perfect fly is small, rounded, and furnished with two comparatively long, jointed, and somewhat hairy or brisky antennæ; the thorax is very large; it has six short legs, and two large, transparent wings, in which are two nervure. The body is short, in comparison with the thorax, and has a long point, curved downwards at the extremity of the abdomen, which is somewhat hairy. It is said of some of the coccus tribe that the males escape backwards from the shell, or case, with the wings extended flatly over the head.

Various remedies have been tried to arrest their progress, such as fumigating the trees with tobacco-smoke, covering them with soap, lime, potash, sulphur, shellac, glue, and other viscid and tenacious substances, mixed with clay, quick-lime, salt, etc.; but all have failed, partially or entirely, and it appears not to be in the power of man to prevent the ravages of these insignificant and insidious destroyers.

The plan of highly cultivating and enriching the soil has also been much recommended, as promoting a healthy, vigorous growth, and strengthening the constitution of the tree, so that it is better enabled to withstand the attacks of these foes. Grease from fat bacon, rubbed on the trunk and main branches, or the rind or outside thick skin placed in the fork of the branches, where the fat and salt may run down the main stem, is said by one person to have been of much benefit; but others, who tried this plan, assert that the trees were killed in consequence of the application. In fact, so many different remedies have been recommended, and so many contradictory reports given of the results, that it will not be prudent to place reliance upon any of them, until a regular series of experiments shall have been instituted with the various mixtures, upon trees of the same age and strength in different soils and localities, and a faithful report given as to the success or failure—bearing always in mind, however, that although the old scale insect may be destroyed, yet millions of eggs may remain unhatched under the sheltering scales, waiting only for a few days' genial sunshine to hatch and spread over the tree, which, perhaps, may have been washed in the meantime by heavy rains, so as not to leave a vestige of the mixture remaining to prevent the young from fixing themselves, *ad libitum*, when they first emerge from the sheltering scale.

Another kind of scale insect (coccus) is also found upon the orange-trees, which measures about the tenth of an inch when fully grown, and is of a much more oval form than that already described. The young cocci were of a yellowish-white color, and had the head and thorax somewhat defined by indentations on the sides, and marks on the scale itself. They are furnished with two antennæ, and had six legs, by means of which they moved about the leaf until they found a place suited to their taste, when they immediately fixed their piercers in a leaf or branch, and became coated with a scale-like covering, which appeared to adhere to the surface of the place where it was fixed; and here they remained motionless the remainder of their lives.

This description applies to the female coccus alone, as the males were not discovered; but doubtless they resemble the species already described, in being provided with wings, as well as in general habits. As the female scale becomes older, it gradually assumes a brownish-black appearance, having a somewhat light colored margin. This coccus appears to be peculiarly subject to the attacks of parasitical insects, which serve materially to check its increase. Many of the scales were observed in September to be punctured with small holes in their backs, made no doubt by small parasitical flies, which had devoured the original tenant of the scale. One of the flies which came out of these scales measured about the twentieth of an inch in length; the body and thorax were of a metallic green color; the eyes black, and the legs of a brownish color; the four wings were transparent, and the antennæ jointed and hairy.

Another hymenopterous fly came out of the dead scales, which also measured about the twentieth part of an inch in length, the thorax and first segment of the body being light-brown, with the rest of the abdomen blackish and hairy; the head was furnished with three ocelli; the four wings were transparent, and the antennæ long, jointed, and hairy. These parasitical flies no doubt do much good in lessening the numbers of this kind of coccus; as, although breeding in similar situations, and with apparently as good a chance to multiply as the others, it was not found to be nearly so numerous as the scale insect first mentioned. This may perhaps be attributed to the attacks of these flies, as hundreds of dried-up scales were seen with large holes in their backs, and the contents eaten out as above described.

While on the subject of the orange-scale insect, it may be as well to mention that some time last year (1855) another coccus was imported into Jacksonville, Florida, on some lemons sent from Bermuda; and, as they may perhaps spread in the vicinity, it would be well to draw attention to the insect, and describe it as far as known. The length of the full-grown female scale is rather more than the twentieth of an inch; it is somewhat pear-shaped, and of a brown color; the grub is of a reddish-yellow, and furnished with a piercer from its breast, like the coccus first described; the young have two antennæ, six legs, and two long hairs, or bristles, at the end of the body. The male scale is not so large as the female, and is formed of a white, cottony or parchment-looking substance, constituting a case, with an elevated and rounded ridge in the center, in which a reddish pupa was found. The mouth of this case was stopped up with a dark-looking substance, apparently the cast skin of the larva. The male larva is reddish in color, and measures not more than the fortieth of an inch in length. The perfect fly is also red, and is furnished with two hairy antennæ, six legs, and has the thorax very large. The two wings are transparent, and the end of the body is furnished with a curved, hard projection. As it is very probable that this insect will increase, it would be well to note any progress it may make during the ensuing year, and to use the remedies suggested in the first article on the coccus of the orange.

There are also found on the orange-trees numbers of small mites which have frequently been mistaken for the young cocci; but they may be very easily distinguished by their activity from the young scale insects, which crawl about very slowly. The mites have eight hairy legs, somewhat like those of minute spiders, and are mostly of a yellowish color, although some are also found of a delicate pink hue. They are generally seen briskly running among the stationary cocci, and may often be found concealed under the old scales; but, whether they do any harm to the tree, or merely feed upon the dead or dying cocci, has not yet been satisfactorily ascertained.

The pupa of a parasitical fly was found under the scale of one of the cocci; the head, wings, antennæ, and legs were perfectly formed as in the ichneumon-flies; the eyes were comparatively large and brown, and the rest of the body of a whitish-yellow. The perfect fly could not be recognized, however, as the pupa died without changing.

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FOR THE AMERICAN FARMERS' MAGAZINE.

Messrs. Editors:—There was a beautiful white horse of great value killed by lightning several nights ago. When found next morning his tongue was burnt, black and swollen, so as to expand his jaws frightfully. His snow-white skin appeared as though dotted all over with innumerable dark spots, which on close examination were found to contain minute punctures as though small shot had been driven through from the internal parts outwardly, and the hairs immediately surrounding these holes were discolored almost to blackness. Is such a legitimate or common effect of the electric fluid? It appeared almost as though it was conducted by the animal's breath through his mouth into his body, and there exploded into thousands of minute fragments which escaped through his hide, staining every hair it touched. It just occurs to me, at this late moment, that the change of color might have been caused by the scorchings of electrical heat rather than any other chemical action. What do you think of it, if you please? Yours, truly,

Andover, Aug. 17, 1857. E. Sanborn.

The above shows a frightful effect of electricity. Will some one versed in the laws of this fluid, (so far as they are known, and that is not very far,) give us his views of its action in this case? Were the punctures in the skin made by an inward or an outward movement of the fluid? There was an instant when the animal was charged (overcharged) with electricity. The next instant his body contained no more than the normal amount of the fluid. Was the charging instantaneous, and the discharging gradual? or was the charging gradual and the discharging instantaneous? or were both instantaneous? Was the horse electrified by induction, or only by conduction, and if the latter, was the fluid passing from the clouds to the ground, or from the ground to the clouds? If we knew half as much of the laws, which govern the electric fluid, as some of our learned professors, Prof. E. S. Snell, of Amherst College, for instance, and scores of others, whom we have not the happiness of knowing as well, we could give a theory of the operation and course of the fluid in the case mentioned by Dr. Sanborn, which should be at least plausible, and therefore *measurably* satisfactory.

Such men as we have just alluded to do not half realize their obligation to throw some of their light outside of college walls. A practical article, if but five pages in length, detailing some of the more important laws of electricity, and showing what are some of the safer positions in a thunder storm, from the pen of the gentleman just named, or another equally well qualified to give it, would be a means of saving several valuable lives every year. Who will give us that very article, and thus entitle himself to our and the world's thanks?

## THE WEATHER.

Appearance of Birds, Flowers, etc., in Nichols, Tioga Co., N. Y., in July, 1857.

By R. Howell.

*Place of Observation,* 42 *degrees North, on a Diluvial Formation, about* 40 *feet above the Susquehanna River, and* 800 *feet above tide, according to the survey of the New-Yrok and Erie Railroad.*

| July. | 6 A.M. | 1 P.M. | 9 P.M. | | | Remarks. |
|---|---|---|---|---|---|---|
| 1 | 57 | 62 | 55 | South | Cloudy. | Hard rain nearly all day. [bloom. |
| 2 | 53 | 70 | 53 | " | " | Ladies' blush and double damask rose begin to |
| 3 | 52 | 68 | 52 | North | " | Light rain in afternoon. |
| 4 | 56 | 78 | 54 | " | " | Tulip tree in bloom. |
| 5 | 52 | 80 | 61 | " | " | [at 6 P.M. |
| 6 | 61 | 72 | 58 | West | " | Hard short shower with hail and violent wind |
| 7 | 58 | 85 | 64 | S.&N. | " | Shower at night and evening. |
| 8 | 62 | 74 | 53 | West | " | Red currants begin to ripen. |
| 9 | 51 | 84 | 58 | " | " | Common sweet elder begin to bloom. |
| 10 | 58 | 88 | 68 | South | " | |
| 11 | 63 | 90 | 69 | West | " | |
| 12 | 66 | 91 | 68 | " | " | Timothy grass begin to bloom. |
| 13 | 65 | 92 | 68 | North | " | One field of oats seen in head. |
| 14 | 63 | 96 | 69 | N.&S. | " | |
| 15 | 68 | 91 | 65 | South | " | |
| 16 | 66 | 89 | 65 | " | " | A few farmers begin haying. |
| 17 | 69 | 93 | 68 | S. W. | " | Milk weed begin to bloom. |
| 18 | 67 | 94 | 70 | " | " | Thunder in afternoon; chestnut trees in bloom. |
| 19 | 66 | 96 | 65 | S.East | " | Hard shower with hail between 5 & 6 P.M. |
| 20 | 68 | 93 | 64 | South | " | Very hard shower at 6 P.M., with hail. |
| 21 | 65 | 78 | 62 | " | " | Light shower between 1 and 2 P.M. |
| 22 | 63 | 84 | 62 | " | " | Light rain from south at 2 P.M. Th'r & Lt'ng. |
| 23 | 62 | 75 | 62 | N. W. | " | Hard rain all afternoon; commence about noon. |
| 24 | 65 | 84 | 66 | " | " | Light dash of rain in P.M. Corn begin to silk. |
| 25 | 60 | 90 | 68 | " | " | Light dash of rain in the afternoon. |
| 26 | 66 | 92 | 72 | South | " | Basswood trees in full bloom. |
| 27 | 68 | 91 | 74 | " | " | |
| 28 | 72 | 90 | 69 | " | " | Rain at 3 P.M. from the south. |
| 29 | 62 | 75 | 60 | North | " | |
| 30 | 59 | 67 | 62 | South | " | Considerable rain in the afternoon. |
| 31 | 63 | 81 | 69 | " | " | |

FOR THE AMERICAN FARMERS' MAGAZINE.

## The Magic Square.

Messrs. Editors:—If you do not deem it inconsistent with the object of your paper, I should like for you or some of your correspondents to throw a little light on the construction of the Magic Square.

Many farmers have a taste for mathematical investigations, and it would, no doubt, afford them a pleasure to meet occasionally with the solution of some curious problem.

Perhaps there are few school-boys who have not puzzled themselves in trying to form the Magic Square. The whole difficulty consists in not understanding the rule. There should be a rule for everything, and this rule should be founded on *reason.*

It is no difficult matter to form one of those squares when the sides composing it consist of an *odd* number of places; but when the number is *even, hoc opus, hic labor est,* and this simply because there is no *rule*—at least, I have never been able to discover one.

I was in hopes that Prof. Pierce, who introduced this subject in one of his Lectures, would have made the matter plain; but he did not—at least to my mind. I shall here introduce a square of each kind, so that some of your youthful readers, in a leisure moment, may exercise their ingenuity in constructing similar ones, and in finding out the rule.

The Magic Square with an *odd* number of places in a side.

| | | | | | | |
|---|---|---|---|---|---|---|
| 22 | 47 | 16 | 41 | 10 | 35 | 4 |
| 5 | 23 | 48 | 17 | 42 | 11 | 29 |
| 30 | 6 | 24 | 49 | 18 | 36 | 12 |
| 13 | 31 | 7 | 25 | 43 | 19 | 37 |
| 38 | 14 | 32 | 1 | 26 | 44 | 20 |
| 21 | 39 | 8 | 33 | 2 | 27 | 45 |
| 46 | 15 | 40 | 9 | 34 | 3 | 28 |

This square consists of 7 places in a side, consequently the highest series is 49, and the sum of the series, in each column both ways, is 175.

The rule by which this square is constructed is easy, but the *reason* of it is not plain.

The Magic Square with an *even* number of places in a side.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 11 | 92 | 12 | 88 | 14 | 15 | 16 | 84 | 83 | 90 |
| 100 | 82 | 26 | 27 | 67 | 35 | 59 | 58 | 50 | 1 |
| 99 | 19 | 75 | 74 | 33 | 66 | 42 | 43 | 51 | 3 |
| 2 | 20 | 76 | 73 | 34 | 36 | 60 | 57 | 49 | 98 |
| 4 | 81 | 25 | 28 | 68 | 65 | 41 | 44 | 52 | 97 |
| 94 | 21 | 77 | 72 | 32 | 37 | 61 | 56 | 48 | 7 |
| 5 | 80 | 24 | 29 | 69 | 64 | 40 | 45 | 53 | 96 |
| 6 | 79 | 23 | 30 | 70 | 38 | 62 | 55 | 47 | 95 |
| 93 | 22 | 78 | 71 | 31 | 63 | 39 | 46 | 54 | 8 |
| 91 | 9 | 89 | 13 | 87 | 86 | 85 | 17 | 18 | 10 |

This square has 10 places in a side, making a series of 100, and the same each way 505.

What we want now, is a *rule* by which this square was constructed. Will some one please make it known? B.

To the private inquiry of the person who sent the above, our answer is, *yes, we accept your proposition,* and we are obliged to answer in this way, because no date was prefixed to the communication, and the post-mark was too obscure to indicate the writer's place of residence. With regard to so much of the communication as we have published, will some one give us the rule asked? This is a kind of amusement which has its utility.—Ed.

# Domestic.

FOR THE AMERICAN FARMERS' MAGAZINE.

## Glue.

Persons who use glue may save trouble, loss, time, and glue, if they will prepare it for use as follows:

Dissolve the glue in as small a quantity of water as possible, and at the heat of boiling water, and while warm, (and away from fire where alcohol will not inflame,) pour into the thick mass enough of alcohol to make it as thin as you want it, stirring briskly while adding the alcohol. Put it in a bottle, over the mouth of which tie a piece of air-proof India rubber. Thus glue may be preserved during many years, ready for use at any time. In cold weather it may need warming a little before use.

Merchant Kelly.

Bentonville, Indiana.

## Puddings by the Wholesale.

Here is a rule for building a dozen puddings or more on one foundation. What an idea! It may be a good, one, however. Let the ladies look at it and see:

Baked Puddings.—Take about three eggs for each quart of milk, beat them thoroughly and stir with the milk, adding salt and sugar or molasses to the taste, and a little nutmeg, or other spice if desired. It is now ready to pour into the pudding-dish and set in the oven as a custard pudding, or with apple or other sauce stirred in, as a fruit pudding; or it can be used as a basis for almost any other pudding. Take the custard as prepared, and thicken it somewhat with cold corn cake or pone crumbled fine, and you will have a light and excellent Indian pudding, or thicken with dry bread well crumbled, for a good bread pudding, that will please all. Or the pieces of stale bread may be sliced thin, and slowly dried and browned in the oven, then pounded fine or ground in the coffee-mill, and a little of this powdered rusk—about one tablespoonful to a quart—used to thicken it, with ground clove for spice, and you have a rusk pudding.

Add rice which has been previously boiled in milk, to the custard, for a rice pudding, or a little sago or tapioca, well soaked and boiled, for a still further variety. Hominy well boiled, or grated sweet corn, too, make puddings which some are fond of. A pudding which we particularly like, is made by taking very thin slices of bread buttered thinly, putting a layer of this at the bottom of the dish, then a layer of apple sliced thin, another layer of bread, and so on till you have enough, then pour a custard made as first directed over the whole, and put it into the oven. Or for the bird's nest pudding, take small tart apples, pare and core, put them in the pudding-dish and pour the custard over.

The proportion of eggs may be increased or diminished in any of these puddings, according to the supply, and raisins or West India currants can be added or not at the pleasure of the cook. All of these puddings should be baked very slowly, and not suffered to boil in the oven. Sweet cream, with sugar, and if wished, a little nutmeg added, makes the best sauce for any of those. Or thicken boiling water with a little flour, add a small lump of butter, sugar, salt and spice, and either lemon juice, or lemon essence and vinegar, and you have a good, plain sauce.—*Ohio Cultivator.*

## Hard Cement.

The following cement has been used with great success in covering terraces, lining basins, soldering stones, etc., and everywhere resists the filtration of water. It is so hard that it scratches iron. It is formed of ninety-three parts of well-burnt brick, and seven parts of litharge, made plastic, with linseed oil. The brick and litharge are pulverized; the latter must always be reduced to a very fine powder; they are mixed together, and enough of linseed oil added. It it then applied in the manner of plaster, the body that is to be covered being always previously wetted with a sponge. This precaution is indispensable, otherwise the oil would filter through the body, and prevent the mastic from acquiring the desired degree of hardness. When it is extended over a large surface, it sometimes happens to have flaws in it, which must be filled up with a fresh quantity of the cement. In three or four days it becomes firm.—*Mass. Plowman.*

## Potato Yeast.

A New-Bedford lady vouches for the good quality of yeast made after the following recipe:

Cook and mash ten peeled potatoes, pour on a quart of boiling water and stir well, and add a coffee cup of sugar; let this stand a few minutes; pour in a quart of cold water, wanting a gill, and when lukewarm stir in a pint of yeast, and set in a moderately warm place to rise. When well fermented, put into a stone jug, cork tightly, and tie the cork down and keep it in a cool place. After the first rising keep enough of this yeast for the second batch. A teacup of this yeast is sufficient for two large loaves of bread; most excellent it is for muffins and griddle cakes also. There is no need for hops or flour in it, and in my opinion it is the best yeast I have ever tried, and I have experimented in all known recipes.

## Treatment of Hens.

Here is a timely item, containing a valuable hint to poultry keepers. An uncredited paragraph in an exchange says: "Two flocks of hens were compared. One laid eggs almost all the time. The other laid scarcely any. On examining their treatment the following differences were found to exist; the former had a warm cellar to roost in during the winter; the latter roosted in a stable where the wind blew in. The former had a fine place in an open cellar for scratching among ashes, lime, and earth; the latter scratched in the manure heap, or in the stable when the cows were put out. The former had plenty of good water, with milk, etc.; the others had no drink except what they could find. It can be seen, we think, why one flock laid eggs generously, and the other did not."

## Agriculture in Portugal.

Professor Haddock, in his address before the State Agricultural Society in 1855, repeated the following legend:

"When reminded of their want of progress in agriculture and manufactures, the Spaniards relate a legend, that Adam, once upon a time, requested leave to revisit this world; leave was granted and an angel commissioned to conduct him. On wings of love the patriarch hastened to his native earth; but so changed, so strange, all seemed to him, that he felt at home nowhere till he came to Portugal. 'Ah, here,' exclaimed he, 'set me down here; everything here is just as I left it.'"

## Hatred of Work.

Rev. Henry Ward Beecher says: "God is the most wondrous worker in the universe—facile, sleepless, untiring; but men instead of counting it a joy to labor, are always striving to evade what is to them a burden, and look forward with delight to the time when they can 'retire.' As a worm, feeding upon mulberry leaves, might say, 'How glad I shall be when I am fat enough to roll myself into a cocoon;' so they eat the leaves of duty and long for no higher joy than this silk worm's happiness. And thus we have cocoon merchants, cocoon lawyers, cocoon ministers, cocoon—everything. The worm's cocoon is worth unwinding, but these men are spoilt—it does not pay to unthread them."

## Fault Finders.

In our judgment there can be no more detestable companion than a brutish fault-finder. We have them every where. Their tailor, their shoemaker, their merchant, all are defective. On Sunday they complain that their preacher preaches too long or too short. In business their lawyer gives wrong advice, and charges too much for it; and the printers—bless the craft, come in for a good share of their spleen. This one's editorials are too lively, that one's too dull and prosy; this is perhaps in the wrong place, and there's a word the "devil" mis-spelled. Then the climate is bad, the weather is too hot or cold, and things are wrong generally and out of gear particularly. Such persons had better wait for a change in their mode of existence, when probably the weather will be really warm and dry.

## Rare Plants for Distribution.

It is stated in a letter from Washington, that the propagating department of the United States Botanical Garden there is in a position to distribute a large number of seedling trees, cuttings and other like matters, in the same manner as dry seeds are given out at the Patent Office. Mr. W. A. Smith, United States Horticulturist, it is said, has now under glass in the garden near the Capitol grounds, hundreds of species of trees, flowers and shrubs, procured through the expeditions to Japan, and to the South Seas, which will be distributed to the public this year. A considerable addition to the green houses is under way in the shape of a large octagon to accommodate the rapidly growing results of Mr. Smith's diligence and scientific enthusiasm. The increased liberality of Congress to this highly useful enterprise will soon be felt throughout the whole country, and we hope our readers will not be backward in availing themselves of these facilities.—*Southern Cultivator.*

## Take Good Advice Whencesoever it Comes.

Some folks are silly enough to disregard all good advice unless he who gives it lives up to his precepts. This is just about as smart as it would be in a traveler to scorn the directions of a finger-post, unless it drew its own leg out of the ground and hopped after its own finger.

## Potato Rot.

The potato rot has made its appearance in parts of this county, says the *Salem Standard,* but as yet has not assumed an alarming aspect. It abounds most in potatoes grown in low ground, and is doubtlees occasioned by the repeated rains with which we have been visited this season. The crop is more than an average one, and must pay a handsome profit to producers, if this blight does not prove of too serious a nature.—*West Jerseyman.*

## A Sour Blessing.

A Frenchman learning English, and anxious to say something very striking, in parting from a lady, consulted his dictionary, and there finding that pickles meant to preserve, he bade her farewell, with the emphatic exclamation; "May heaven pickle you!"

## Rheumatism.

☞ Lemon juice is relied upon by the physicians of London for curing the rheumatism. Three table-spoonfuls per day is a dose for a man.

## Poor Substitute for Industry.

"When a fellow is too lazy to work," says Sam Slick, "he paints his name over the door, and calls it a tavern or a grocery, and makes the whole neighborhood as lazy as himself."

## Gentlemen and no Gentlemen.

The late Vicar of Sheffield, Rev. Dr. Sutton, once said to the late Mr. Peech, a veterinary surgeon, "Mr. Peech, how is it you have not called upon me for your account?" "Oh," said Mr. Peech, "I never ask a gentleman for money." "Indeed," said the vicar; "then how do you get on if he don't pay?" "Why," replied Mr. Peech, "after a certain time I conclude that he is not a gentleman, and then I ask him!"

## Swallowing Poison.

If poison should be swallowed accidentally, take two teaspoonfuls of ground mustard, mixed in warm water. It will operate as an instantaneous emetic.

## Cheap Fruit.

An American, at Gibralter, writes that he bought "two pounds of grapes, two pounds of apples, two of peaches, two of lemons, and a basket to carry them, and all for a quarter of a dollar."

# Children's Page.

Now, children, a little more about our German boy, and a bit of a moral; and then we will give you a question or two in arithmetic, and you may get Henry, Charley, Fanny or Isabella, or any one else to help you solve them if you can not do it alone.

To-day the boy brought us a bundle of letters. The first opened said: "Enclosed is that balance of one dollar." We looked; there was no dollar; we said, but perhaps not as playfully as we felt: "A, you must have got that dollar; we shall take it out of your wages." Nothing more was said, and we supposed that the writer of the letter had posted it hastily and forgotten to put in the dollar, as we have done sometimes, and then written another and sent it with the money endorsed to chase the first, and carry on our apology. At the close of the day, A came to us and assured us most seriously that he had not taken the money. Of course he had not, for the letter was closely sealed, and we had not had the least suspicion. But he had been feeling badly for two hours or more. We hastened to relieve him by assuring him that we were only in fun, that we meant nothing, and knew he would do no such thing. Our moral is, that "it is a good thing for children (and everybody else) to be so honest, sincere and true, that nobody can suspect them." The letter, in this case, unbroken as it was, would have saved the boy from suspicion, but another time circumstances may be different, and it is always desirable to have a good character to fall back upon. *A character above suspicion is worth more than every thing else.*

QUESTIONS IN ARITHMETIC.

A thousand of the operations by which God constantly blesses mankind, are so silent, so quiet, so common, that we think little of them. Look at the falling rain. If men were to water a parched acre, what a bustle, what an array of horses and carts and drivers there would be; and they could not do it half as well after all as it is effected by a single shower. It is the hydraulic power of the atmosphere that waters the earth, is it? Yes; but that power is God's power, as all other power is. His hand waters the earth and makes it fruitful; and now in order that the children may have some idea of the extent of his power and goodness in this one thing, we want they should study out and answer these questions. Calling the cubic foot of water 63 lbs., how many tons of water fall on an acre of land in a gentle shower of two or three hours continuance, which gives one inch in depth? How many in a township of fifty square miles? How many on a county forty miles square? And how long a canal, 25 feet wide and 4 feet deep, would the water which falls in such a shower on a State of 50,000 square miles, fill? If an answer is sent us to these questions, with the figures neatly written out, we will propose others at another time.

We advise the farmers' boys to exercise their judgment of distances, height, size, and weight, by a sort of game of estimating, to see which will come the nearest. Say, how far off is that tree? 20 rods says William; 25 rods says James. Measure it. It is 19 rods; William beats. How high is that plum-tree? 20 feet, 18 feet, 25 feet, 30 feet, are said; it measures 23 feet. The boy who said 25 has beat. How large is that log? 9 feet in circumference, 8 feet, 6 feet. Draw a cord around it and see. If a yoke of oxen are to go on the scales, let the boys try their judgment at estimating beforehand the live weight. Or if an ox is to be slaughtered, let them pass their judgment upon the net weight.

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If you wish to be beautiful, you must be good.

# Book Notices, etc.

Introduction to Monteith's Manual of Geography.

This is a good little work for children; is highly illustrated, as works for that class should be; and it makes us wish there had been such works when we were a child. Published by A. S. Barnes and Co., 51 and 53 John street, N. Y.

The National Pronouncing Speller, by Richard G. Parker and J. M. Watson, author of "The National Series of Readers." A. S. Barnes and Co., 51 and 53 John street, N. Y., Publishers.

This is an effort, successful we should think, to smooth the passage, for both teacher and pupil, through that hard road to travel (it was so to us and we have hardly got through it yet) of learning to spell English.

How to do Business; a Pocket Manual of Practical Affairs, and Guide to Success in Life. Fowler and Wells, 308 Broadway, N. Y., Publishers.

A good book for young men, and one in which older heads might see the causes of failure, and learn to do better in future. Young business men, and others who have not succeeded to their minds, would do well to read it. It contains much common sense, practical instruction.

The Word-Builder; or National First Reader, on a plan entirely new. By Richard G. Parker, A.M., and J. Madison Watson. Illustrated from original designs.

This is one of those modern contrivances with which the age abounds, for making learning easy to children, some of which are really good, as we believe from a cursory perusal, this is. Success to all such attempts. Any facilities that consist with thoroughness are a public good.

The Song of Hiawatha. By Henry Wadsworth Longfellow. Boston: Ticknor & Fields. 1857. 40th thousand. 310 pages, 12mo.

Many products of the intellect as of the soil, spoil by keeping. Not so with this. It is as fresh and sweet as were its first sheets. Many others spoil by using; but this seems to improve as we are familiar with it. It will live as long as the legends of the original tribes, and will be admired as long as it lives.

White Lies. A novel. By Charles Reade, Author of "Never too Late to Mend," "Peg Woffington," "Christie Johnstone," etc. Part 1. Boston: Ticknor & Fields. 1857. In 4 parts.

The reputation of the author secured for this book high anticipations. Nor will the reading of it cause any disappointment. In this part it opens well, and is full of promise for the future.

Memories of the Loves of the Poets. Biographical sketches of women celebrated in ancient and modern poetry. By Mrs. Jameson, authoress of "Diary of an Ennuyee," etc. Boston: Ticknor & Fields.

It is often a source of perplexity with the general reader of poetry to know how much to regard as truth and how much as fiction. These little volumes will be prized by such as of great value, and every reader of taste will be at least entertained and gratified by their perusal. They are beautifully executed, and should be on the center-table and the shelves of every reader and scholar.

School Days at Rugby. By an Old Boy. Boston: Ticknor & Fields. 1857. 409 pages, 12mo.

"Tom Brown's school life" is full of interest, well written, full of life, recalling, by association, a thousand reminiscences in the life of many of its readers. It will be read wherever opportunity and good taste are found.

THE TESTIMONY OF THE ROCKS; OR, GEOLOGY IN ITS BEARINGS ON THE TWO THEOLOGIES, NATURAL AND REVEALED. By HUGH MILLER, etc. Boston: Gould & Lincoln. New-York: Sheldon, Blakeman & Co.

Hugh Miller requires no introduction from us. Mr. Bayne well says, in a book notice with this, that "the Duke who would come to confer distinction on Hugh Miller by taking his hand, and showing him a little countenance, would get himself simply covered with derision." Nor is it necessary to say that this book fully equals its predecessors, both in importance and in interest. No scientific scholar will voluntarily be without it, nor fail to read it. A sketch of Mr. Miller's character and death occupies some 30 pages of the volume. It is richly illustrated with 152 engravings.

SERMONS ON SPECIAL OCCASIONS. By REV. JOHN HARRIS. 1st series. Boston: Gould & Lincoln. New-York: Sheldon, Blakeman & Co. 1857. 363 pages.

These are invested with the interest peculiar to posthumous publications. The high reputation of Dr. Harris is well sustained in this volume. These sermons were delivered on various special occasions, and his numerous friends will prize this among their choicest volumes.

ESSAYS IN BIOGRAPHY AND CRITICISM. By PETER BAYNE, M.A., author of the Christian Life, Social and Individual, etc. 1st series. Boston: Gould & Lincoln. New-York: Sheldon, Blakeman & Co. 1857. 426 pages.

We are sometimes half inclined to censure, lest our frequent encomiums should be considered as a tribute to publishers. But when as good books are sent us as many of those we receive, we can not hesitate to praise them. And now with this volume of Essays before us, we are constrained to commend highly. If our opinion is worthy the attention of our readers, surely the studied and detailed criticisms of Mr. Bayne, upon a long list of the most eminent authors of the times, including De Quincey, Tennison, Ruskin, Hugh Miller, etc., with Dickens, Thackeray, Bulwer, and Currer Bell, can not fail to be of great value, and to command general attention. Some of these essays, for we have not read them all, are intensely interesting.

THE POETICAL WORKS OF JOHN GREENLEAF WHITTIER. Boston: Ticknor & Fields. Complete in 2 volumes, 16mo.

There is no sweeter poetry than some of Mr. Whittier's, and very few authors can count more friends than he. A choice edition, like these beautiful little volumes of all his poems, will be hailed as a boon by them and by the multitude of his readers.

The author of "The Lamp Lighter," Miss CUMMINS, has in press, and soon to be issued, a new tale, to be published by John P. Jewett & Co. We have been favored with a perusal of some of the proof sheets, and we can assure our readers that her great reputation already achieved, will rise still higher when this book is published. It is the result of more than two years' labor, is written with almost classic elegance, and will find a ready sale wherever reputation, talent and high culture can secure a favorable reception. The name of this beautiful tale is to be MABEL VAUGHAN.

SORGHO AND IMPHEE, THE CHINESE AND AFRICAN SUGAR CANES; by H. S. Olcott, Associate Principal of the Mt. Vernon Farm School, Westchester Co., N. Y.; C. M. Saxton & Co., 14 Fulton street, publishers.

This is a forthcoming work, on a subject about which many desire to be informed. We understand it is to contain about 400 pages, and to be sold at $1 00. From what we know of the author and his sources of information, we feel assured it will contain a large amount of valuable matter on the culture of these plants, and their uses as food for cattle, and for the manufacture of sugar, syrup, alcohol, etc. By an arrangement with the publishers we shall be able to send it for $1 00 enclosed, prepaid to any who may order it through us.

We see by the Regulations and Premium List, that a goodly sum is to be distributed, and that the mechanics and mechanic arts are not forgotten. That is right. There is not good land enough, even in our glorious West, to make farming a good business, unless manufactures and the mechanic arts flourish, too.—Ed.

The Skillful Housewife's Book; a complete Guide to Domestic Cookery, Taste, Comfort and Economy, combining 659 recipes, pertaining to Household Duties, the Care of Health, Gardening, Flowers, Birds, Education of Children, etc. By Mrs. L. G. Abel, Author of "Gems by the Wayside," "Woman in her various relations," etc. Published by A. M. Saxton & Co., 140 Fulton street, New-York.

So far as we can judge of such matters, this book is judiciously executed, and contains a very large amount of practical and valuable instruction in things pertaining to the health, comfort and economy of families. Solomon, we suppose, had reference to the subject, when he said, "She looketh well to the ways of her household."

Thirty-fifth thousand on sale. We will send this book post paid to any of our subscribers on the receipt of the price, 25 cts. in paper, 50 cts. in cloth, post-paid.

## Ditson & Co., Boston, Mass.

In a recent visit to Boston, we were shown over the new, beautiful and extensive publishing office and sales-rooms of these extensive dealers in music. The building was erected by them for their own exclusive use. It is 277 Washington street, is five stories high, 25 feet front, which is of granite, and nearly 100 feet deep. Their stock embraces every thing published in this country and a large quantity of foreign music, whether in sheets or volumes. The basement is exclusively devoted to the wholesale department of sheet music, and its shelves contain about 4000 cubic feet of music. Here, too, is a safe to hold 50,000 plates, and even more, if closely packed. The story above the basement is for retail. The second story is the piano-forte room. The third floor is the book room, and some judgment can be formed of the extent of the business of this house, when we state that the number of their own publications in volumes and instruction books, and such like, exceeds 400. This room contains some 200,000 volumes. On the fourth floor is the stock of printing papers, covers, books in sheets, etc. On the fifth their sheet music is printed, giving employment to twelve presses and twenty workmen. The books published by them are printed elsewhere. The amount of paper used at this establishment annually, is not less than 100,000 reams. Their publications include much standard music. They have issued several volumes of operas in score. Il Trovatore, that last and perhaps most beautiful, as it surely is one of the most popular of all brought out at the N. Y. Academy, has been published lately. It, like its predecessors, is executed and done up in excellent style. Nor is sacred music overlooked here. One of the recent issues of this house consists of a volume of Catholic music, called The Memorere, and contains the very gems of this splendid style of this divine art. The Golden Wreath, a collection "for schools, seminaries, select classes," etc., represents another extensive and very important department in this establishment. All these are standard works of their kind. We advise all our musical friends to avail themselves of some opportunity to look over these attractive and loaded counters.

A New Phase in the Iron Manufacture.—John B. Wickersham, 312 Broadway, New-York, has put out a splendidly illustrated circular of his business, of 80 pages, folio, containing, in addition to private notices, a vast amount of information on the manufacture of iron and its trade, valuable to everybody. Price by mail three 3 cent postage stamps.

## A Suggestion kindly received.

A CORRESPONDENT from the Far West says of our Magazine:—"It is to my mind defective in this—a horticultural or pomological department. Whilst I feel a deep interest in all agricultural improvements, stock growing, etc., yet it does not abate my interest in horticulture in the least. On the contrary I am increasing my orchards, fruit and ornamental garden with renewed zeal."

Just so every farmer should do, and if, in our zeal in the great and absorbing interest of agriculture at large, we have paid less attention than we ought to the hardly less important matters of the garden and the orchard, we will strive to mend our ways.—ED.

Another correspondent says:—"I have long since expressed my humble opinion that your monthly ranked with the very best publications of this age, having been (pardon my vanity) a little proud of it, as a publication hailing from my native State, a State in which many years of my life have been employed in farming. In Ohio, the third State of this confederacy, agriculture is the great interest. As a science it has been lamentably neglected in years past, but a better day is dawning in our State. Agricultural reading, agricultural schools, and every thing pertaining to the subject is constantly progressing, and I hope the day is not far distant when Ohio shall stand foremost in every department of agriculture."

We are sorry when New-York looses such farmers as the above, but are glad when Ohio gains them.—ED.

## How to make Water Cold without Ice.

THE following description of a method of rendering water almost as cold as ice has been going the rounds of the press for many years. Just now it is again "in season," and we copy it for the benefit of those of our readers who either have not the opportunity or the inclination to purchase ice:

Let the jar, pitcher, or vessel used for water be surrounded with one or more folds of coarse cotton, to be constantly wet. The evaporation of the water will carry off the heat from the inside and reduce it to a freezing point. In India and other tropical climes, where ice can not be procured, this is common. Let every mechanic and laborer have at his place of employment two pitchers thus provided, and with lids and covers, one to contain fresh water for drinking, the other for evaporation, and he can always have a supply of cold water in warm weather.—*Exchange.*

This should be received with some grains of allowance. If you could afford to keep the surface of the pitcher constantly wet with ether, you might even freeze the water in it. It is true also that keeping the surface wet with water, as above described, will cool the water within sensibly, if the air be dry, and evaporation consequently rapid. But in ordinary states of the atmosphere, the process is at best slow, and in a damp sultry day would be quite unsatisfactory. We have little doubt that it would be quite possible to construct a vessel in such a way that a part of the water contained in it might leak through, keep the outer surface moist, evaporate and leave such a chill upon the vessel that the water remaining in it would be so reduced in temperature, as to serve well for ice water. If we happen to think of this at another time we will suggest a mode in which we suppose it could be done, and any of our friends may try it, and, if they choose, may take out a patent, in case they succeed. Our present object is simply to illustrate a great principle, one exceedingly important to the farmer.

It is a well known fact that when ice melts it contains more heat than it did when in the condition of ice, and is yet no hotter—will raise the thermometer no higher, and feels no warmer to the hand. Again, when water evaporates—changes from water to vapor, as before from ice to water—it contains 1000 degrees additional heat, and yet is no warmer as judged of by the thermometer, or by the senses. What was before sensible heat becomes insensible, or latent. Now, when water evaporates, it takes this thousand degrees of latent heat from the nearest objects. Dip your finger in ether, and then hold it in a current of air, and it will feel very cold, by reason of the natural warmth being drawn from your finger to supply latent heat to the evaporating ether. If you dip it in water, the same effect will follow, only in a less degree. That is, whenever a liquid evaporates, it steals away the heat necessary to maintain it in the state of vapor from the body from which it evaporates, whether that body be the surface of a pitcher, or the surface of our bodies, or of the earth.

If we are understood, it now appears why a soil from which the redundant water passes freely through a porous subsoil into the deep earth, or in the lack of a porous subsoil, runs freely through well laid drains, is many degrees warmer and the crop several weeks earlier than happens in a soil from which the redundant water passes by evaporation into the air.

## An Old Absurdity.

"We find the following old absurdity in a well written article by Mr. Nash, of New-York, in the last No. of the *Plough, Loom and Anvil:*

"'We are told by the philosophers that since the creation the remains of the human family alone would cover the land on the globe more than a foot deep of soil.'

"Take the most populous country on the globe—say Belgium—with a population of 345 to the square mile, and suppose every day of the six thousand years since creation had produced a generation equal to the present, the whole crowd could stand on a square mile, and each have room to kick his neighbor off his premises."

*Remarks.*—We cut the above from *Life in the West*, an able and spirited little paper, published at Sigourney, Iowa. Our readers will perceive, if they look at the initials, that we were not the writer of *that article*. It was handed us by a namesake of ours, who probably descended from Julius Cæsar, as we suppose we have, though we can not trace our ancestry to that source with absolute certainty, and who may have had nearer ancestors in common with us, possible the famous Beau Nash, who used to figure as master of ceremonies in somebody's (we forgot whose) court. It is also quite probable that we are both cousins of that John Nash who used to play the fool with poor old George the Third, or some of his progeny, (our memory is bad again,) as the king's architect, and who contrived to get money enough out of him to build himself a splendid mansion near Osborn House, in the Isle of Wight, which we had the pleasure of visiting a few years ago, and that notwithstanding that he seems to have been a rogue and we are honest men. But be all this as it may, the article was a good one, and we are proud of having published it from the pen of a relative, one who has undoubtedly a common origin with us somewhere a great way this side of father Adam.

We fully agree with the editor of *Life in the West*, that the article is a "well written one;" and we agree with him further, that our friend has not at all committed himself to "An old Absurdity," but has only said, "We are told by the philosophers," etc. The article in question abounds in facts of great value and importance to the farmers of this country. If any of the philosophical deductions it contains are not perfectly accurate, or if allusion is made to speculative errors of "the philosophers," without correcting them, we regard that as of very little consequence. But our friend is undoubtedly able to defend any statement he has made, and we leave it with him. For ourselves, we do not believe that all the humanity that has died for the last six thousand years would make a foot, nor half a foot, nor a quarter of an inch of soil over all the land on the globe. "The philosophers" are certainly mistaken. But how is it with our Iowa brother of the pen? He should consider that a generation of 345 a day would make 126,011 in a year, and 756,067,500 in six thousand years. Now it is said that Xerxes had an army of five millions, men, women, children, scullions, and all the rest: We don't believe it was more than half as large; even allowing two hangers on for every man that could'nt or would'nt fight. But if there were 5,000,000, including the rag-shag and bob-tail, what then? 756,067,500 men would make 151 such armies, and leave 1,067,500 men to be kicked out as unarmy-worthy. Does our Western friend think they could all stand on a square mile, and leave a wide berth for the lower extremities to play in? We doubt whether he could stick as many pins in a square mile, though we have made no calculations. Will some of our children readers answer the following questions, and send us the figures. If their elder brothers and sisters should help them a little, no matter.

1st. If each man occupies only one square foot, and that would be close enough to prevent any far-fetched kicks, how much land would be required for 756,067,500 men to stand upon? The answer may be in miles, acres, rods and feet.

2d. How many pins could be stuck in a square mile, allowing that each pin, including the head, was one twentieth of an inch in diameter, or in other words, allowing each pin to occupy a square one twentieth of an inch each way, which would give 400 pins to the square inch?

These are not very difficult questions. Let us have an answer. No matter if we have more than one, as it would be a good exercise for the children to write a handsome letter, and such is our interest in children that we should not tire of reading them.

## Maine State Fair.

This Fair is to be held in Bangor on September 29th and 30th and October 1st and 2d. The programme for the several days is generally announced as follows: On Tuesday, the several committees will call upon the Trustees in session at the City Hall, and fill any vacancy that may exist, and proceed to the examination of the departments entrusted to them, and make their decisions. On Wednesday there will be a drawing match for horses and oxen, a trial of speed for horses, and in the evening a meeting of the Pomological Society. On Thursday there will be a ploughing match at 1 o'clock, a trial of speed of horses at 10 o'clock, ladies riding at 2 o'clock, and another trial of horses at 4 o'clock. On Friday, the premium stock will be discharged after being ranged and led round the course; then another trial of speed, sale of stock, etc.

About these lady riders we say to our Maine friends in all earnestness;—if you can turn out from 150 to 300 ladies, well skilled in horsemanship, ladies of unquestioned respectability, your own wives and daughters, not professional circus women, or men in woman's clothing from town; if you can furnish as many well trained horses, safe and suitable for ladies to ride on a public occasion; if you can furnish the ladies a separate enclosure, where they can mount according to their own notions of convenience and propriety, and give their horses a trial before making their debut on the show ground, we advise you to let them ride by all means. Our females need invigorating exercise. It should be encouraged; and nothing is more exhilarating, invigorating, than riding horseback. But if you can only persuade half a dozen of them to compete with as many girls or boys in skirts from the city, and especially if you have not perfect preparations for the game, don't try it. We advise no lady to take the staring, unless as many as a hundred and fifty will agree beforehand to divide it with her.—Ed.

## Strawberries.

We have received from Wm. R. Prince, Flushing, L. I., his Descriptive Catalogue of Strawberries, embracing upwards of one hundred varieties, among which we notice Peabody's Seedling.

## State Fairs for 1857.

| | | |
|---|---|---|
| Ohio | Cincinnati | September 14—18. |
| Canada East | Montreal | September 16—18. |
| Illinois | Peoria | September 21—26. |
| Pennsylvania | | Sep. 29, to Oct. 2. |
| Vermont | Montpelier | Sep. 8, 9, 10, and 11. |
| Wisconsin | Janesville | Sep. 29, to Oct. 2. |
| Michigan | Detroit | Sep. 29, to Oct. 2. |
| New-Jersey | New-Brunswick | Sep. 29, to Oct. 2. |
| Maine | Bangor | Sep. 29, to Oct. 1. |
| California | Stockton | Sep. 29, to Oct. 2. |
| Canada West | Brantford | Sep. 29. to Oct, 2. |
| United States | Louisville, Ky | October 1—6. |
| Indiana | Indianapolis | October 4—10. |
| New-York | Buffalo | October 6—9. |
| Iowa | Muscatine | October 6—9. |
| New-Hampshire | Concord | October 7—9. |
| Kentucky | Henderson | October 13—16. |
| Connecticut | Bridgeport | October 13—16. |
| East Tennessee | Knoxville | October 20—23. |
| Massachusetts | Boston | October 21—24. |
| Maryland | Baltimore | October 21—25. |
| West Tennessee | Jackson | October 27—30. |
| Virginia | | October 28—31. |
| Tennesse | Nashville | October 12—17. |
| Alabama | Montgomery | October 27—30. |

## NEW-YORK CATTLE MARKET.

August 26, 1857.

Beeves are sold by the estimated dead weight of the four quarters; the so-called "fifth quarter" (hide and tallow) is not reckoned in here as it is in Boston and some other cities. When cattle are weighed or estimated alive, the dead weight is reckoned at a certain number of pounds to the 100 lbs. of live weight, as agreed upon. The general rule in this market for medium cattle is 56 lbs. to the 100; 44 lbs. being allowed for the "fifth quarter" and offal.

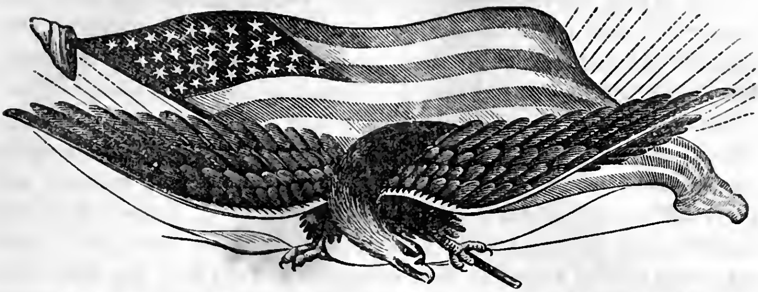
The *average* prices to-day, as compared with last week, are about 1 cent higher.—*N. Y. Times.*

Milch Cows with Calves.—Not unfrequently a cow is sold at $90 to $100, or even $120. The general price throughout the year for ordinary cows is $30 to $40 or $50. Quite a number sell above $50, and more, perhaps, below $30. We often see apologies for cows go at $20 to $25. Market fully supplied and sales slow.

Veal Calves.—Veal Calves are sold by live weight, each animal being weighed alive at the time of sale. "Bobs"—that is, Calves a few days old—are usually sold by the head at such prices as can be agreed upon, sometimes for but little more than the skin is worth. Prices of calves having less or more experience of life, from 6 to 8 cents the lb., live weight.

Sheep and Lambs.—These are chiefly sold at Allerton's, Browning's, and Chamberlin's, at so much per head for a particular lot of Sheep or Lambs, or of the two together. They are also frequently sold by live weight, as this is readily ascertained. The actual prices at the different yards seldom vary greatly. The difference in reputed prices is generally due to variation in the quality. When they are sold by weight, it is usually the *net* weight, which is ordinarily one-half what they weigh when alive, the pelt and offal making the other half. If fat and small-boned, they will dress 55 lbs., and in some cases 60 lbs., per hundred. The average run is about one-half the live weight. The receipts for the past week have reached a higher figure than for a long time previous. A very large proportion of these were lambs. Many of them light and thin. The market is at present overstocked and some sell at low prices. Sheep in good condition sell at 9 to 10½ cents per lb. dressed weight, and 8 to 12½ cents per lb. for lambs.

Swine.—These are sold alive at so much per lb., gross or live weight. Supply past week not quite equal to the demand. Corn-fed hogs from 8 to 8¾ cents per lb. Distillery-fed 8 cents. Not half difference enough. Who, that knows what he is about, would not wish the pork steak for his breakfast to be out of the farmer's corn-fed hog? Stock hogs, 7⅜ to 7½.




# AMERICAN FARMERS' MAGAZINE.

VOL. X. OCTOBER, 1857. No. 4.


## Our Agriculture.

Is it prosperous? If we look at the condition of the farmers, the gardeners, the orchardists, all who are drawing from mother earth for the support of her children, we shall say it is. A larger proportion of these, than at any former period in our history, are enjoying an enviable fame, as the result of their *head* and hand labors in the soil. More, perhaps, than ever before, are becoming decidedly rich. Many are in a condition in which they have reason to be contented and happy. The workers in the soil, and all who are putting their intelligence and energy at work for the supply of necessary food and innocent luxuries, are better paid.

But are agricultural and horticultural products increasing, as a whole, relatively with the population? The contrary is true. From 1840 to 1850, the falling off in the production of wheat was one seventh, in potatoes one third, and in horned cattle one tenth. That there may have been an increase in other products, is possible. It is true also that the aggregate products of the soil have steadily increased for these many years; but there can be no doubt that relatively with the population there was, from 1840 to 1850, considerable decrease. This appears from a comparison of the U. S. census at these two points; and we might allow largely for inaccuracy, and still find a decrease, as compared with the population.

Meantime our exportation of agricultural produce doubled in these ten years, and has nearly doubled again since 1850. Multitudes have rushed from the farm to the building of railroads, from cultivating the soil to speculating in land, from homes in the East, where, on a harder soil, they were producing a little more than they consumed, to homes in the more fertile West, where, of course, they produce for a year or two at first less than they consume. Other nations, the while, are willing to take more of our produce; and so we present at this moment the spectacle of a nation producing relatively with the number of inhabitants less and less, and exporting more and more.

Such a state of things ought to produce good times for the cultivators; especially when we consider that increasing wealth enables many among us to enjoy the luxuries of the garden, orchard and vineyard to an extend hitherto unknown, and at prices which our fathers never dreamed of. It has produced good times, and hence the truth of the assertion with which we started that the wise, foreseeing head and hand cultivators are doing better than ever before. But it may not be unwise to pause a little and inquire whither we are tending. If the mechanic, by the reward of the shop, can not buy meats and vegetables at present prices, may he not turn to the soil for a living, and so the farmer have him for a competitor instead of a customer? If the manufacturer, by reason of the high price of the raw material, can not keep his mills going, what will become of that five, six, eight, ten hundred of the farmer's customers that were gathered round him? Will they be driven to cultivate the earth, and so the farmer lose them as customers, and the country lose the benefit of their superior skill as manufacturers, and take instead their unskillfulness in the soil?

As a nation, we are drifting somewhere. May it not be well to look out for breakers? For our own part, though in a country of such immeasurable resources, and with the energy we possess to develop them, we would not be prophets of evil, yet for our lives we can not see all fair weather and high prices ahead for the farmer, unless the shop and the factory, as well as the plough and the reaper, are kept going. Right glad are we if foreign nations will continue to take our wheat and corn. All we shall export will be a little help to American agriculture—better than nothing. But really, so far as we can see, and we do not pretend that it is very far, we would rather, for the sake of our own farmers, import a hundred mouths than export a million bushels of wheat; and would sooner employ ten sets of muscles in our own shops, to be fed by American farmers, and to make what Americans need or will have, than to pay for the work of a thousand sets of muscles abroad, to be sustained mainly, after all our exports, by the foreign farmer.

We would rather use our own iron ore, since God has given us more than all the world needs, than pay for other people's; rather use our own coal to smelt it with, since God has given us more than enough; rather work the iron, the cotton, the wool, and everything else into the forms we need, and be truly independent, than pay anybody else for doing these things ; and that not less for the sake of American farmers than of all other Americans, whether by birth or by choice.—Ed.

## Bones.

The value of bone-dust as a manure has been so thoroughly established in other places, and in fact affords such permanent fertility to the soil, that it is matter of surprise that so little of it has been used in this region of country. We can only account for the neglects of this and other means of improvement, by the reliance which farmers have got into the habit of placing on Peruvian guano. This enters into the production of almost every crop ; and even at present prices it continues to be purchased with avidity ; though it is thought by many judicious farmers that if an accurate debit and credit account was kept with it, the profit would not be found in the majority of cases to counterbalance the expense.

The waste of fertilizing material in the form of bones, in such a place as Petersburg, is incalculable. And we think a company of enterprising gentlemen could not make a better investment, on a moderate scale, than by the establishment of a mill for the purpose of grinding the raw bones. That they could be collected in large quantities can not well admit of a doubt. Whenever it is ascertained that there is a certain market for them, they will be carefully preserved by most housekeepers or their servants, just as ashes have long been; and they might both be collected at stated times in the same manner. Depots for their reception might also be established in the neighboring towns, such as Lynchburg, Farmville, Weldon, and even in the city of Richmond. A little systematic effort would soon bring all such arrangements to bear.

In view of some such enterprise, and in order to promote it to the best of our ability, we submit some remarks on the peculiar value of bones as a fertilizer. Their composition is, when dry, of earthy matter about 66 lbs. in 100 ; and of organic matter 34 lbs., which is the amount carried off by burning. The earthy matter consists of phosphate of lime, or lime in combination with phosphoric acid—substances both of them, forming valuable applications to every soil. The organic part is called *gelatine* or glue, which is extremely rich in nitrogen, and therefore an excellent manure.

Bones are thus seen to unite some of the most desirable organic and inorganic manures. For speedy action on the growing crop, they should be reduced to a fine state, which can only be done by very powerful machinery. Eight or ten bushels per acre are thought to be a liberal application ; but the effect will be more satisfactory when combined with half the usual quantity of barnyard or stable manure. What the effect would be on tobacco, we are unable to state from actual experiment ; but we have used it on cabbages and turnips with the best results. For plants of this class, indeed, it may be regarded as a specific manure ; and its action on tobacco would no doubt be equally conspicuous.

The most popular form in which bones are now used as manure, is in a state of solution with sulphuric acid. This preparation is known under the name of *superphosphate of lime*, and if made according to chemical principles, there can be no doubt of its value. But since it has become an extensive article of manufacture and commerce, it can not always be relied on as genuine. Every farmer of ordinary intelligence, however, can make it for his own purposes. To every 100 weight of bones, about 50 or 60 of acid are taken; or if the powdered bone is used, but little more than half the quantity of acid will be necessary. The acid should be mixed with two or three times its bulk of water, and poured on the bones—one-third at a time—and permitted to remain for 24 hours, the mass being occasionally stirred. Another third may be poured on the second day, and the remainder the third day. A tub is a convenient vessel in which to prepare the mixture. Two bushels of bones, treated in this manner, will be sufficient for an acre of ground—the expense of which will be something like the following: bones $1; 50 lbs. acid, which, at the cost per carboy, would not exceed 3 cents per pound—say $1 50. At an expense, therefore, of $2 50, a sufficient quantity of superphosphate of lime may be prepared for one acre of land.

It may be thought that the acid will prove destructive to the oil and gelatine contained in the bones, but it is not at all injurious to them. The whole earthy or inorganic portion may be dissolved out by the acid, while the cartilage or gelatine will remain—retaining the size and form of the bone. Sulphuric acid may be also mixed with guano with manifest advantage; not only with the phosphatic guanos, but with the Peruvian. It will act on the phosphates and prepare them for the immediate use of plants, without diminishing the energy of the organic constituents.

The above, originating with the *Southern Farmer*, but taken by us from the *Richmond Whig*, is all true, and is of so much real, practical importance that we are willing to do our part to keep it going, and we hope other editors, who can find or write nothing better, as we are sure not many can, will do the same; and we here venture the opinion, that a ton of bones, finely crushed, as above recommended, with the gelatine and oil, applied to any and all crops, either with or without the sulphuric acid, at the rate of 250 lbs. to the acre with half the usual quantity of barn manure, will give a greater return than any ton of guano ever imported, except the best Peruvian. If applied with the acid, the return will be more speedy. If without, the return will be more gradual, but probably about as great in the end, and less profitable only because farming, like other business, thrives best with quick returns. One other thing we wish to say here, and we wish both scientific men and practical farmers would consider it well: *The very same arguments, which are being used to prove that phosphatic guano is better than the real ammoniacal Peruvian, would prove that bones, crushed and used as recommended by the Southern Farmer, are better than Peruvian guano.*—Ed.

## From Liebig.

"In all cases of failure in the culture of a plant, the immediate cause must be sought in the soil and not in the want of the atmospheric supplies."

"As the smallest particles of nutriment do not change their place in the ground while the soil retains them, it must be seen what an extraordinary influence upon the fruitfulness of the land, or the amount of the harvest, is exercised by working the soil mechanically, by carefully pulverizing, and thoroughly mixing it up for each successive crop."—*Liebig.*

If we understand the first of the above, the idea is that if you feed your plant rightly at the root, the mechanical and chemical conditions of the soil being such as the plant requires, this causes a greater expansion of leaves, and thereby enables it to draw from the air so as in all cases to attain a reasonable growth and productiveness. In this sense it is undoubtedly true. But if he should go farther and deny that the chemical condition of the air has an influence on the growth of plants, it would be untrue. Of two hills of corn, equally well cared for at the roots, if one is in a very pure atmosphere, and the other in an atmosphere surcharged with the breath and exhalations of animals, affording carbonic acid and ammonia, the latter will grow the more luxuriantly. We have no doubt that the action between the roots and the leaves is reciprocal—if the feeding of the roots causes the leaves to spread and draw more strongly upon the air; so the feeding of the leaves causes the roots to spread and draw more strongly upon the soil.

The second remark, quoted above from Liebig, is of a more practical nature. We can not believe, with him, that the particles of nutriment do no change their place in the ground. We believe on the other hand, that through the influence of suns, rains, frosts, and various chemical affinities they are always in motion, always tending to an equal diffusion through the whole soil. But Liebig's inference is important, whether from true or false premises. Unquestionably the "amount of the harvest" depends largely upon "working the soil mechanically, carefully pulverizing and thoroughly mixing it up for each successive crop."—Ed.

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## Something about Potatoes.

An item is going the rounds, to the effect that potato tubers are not exhausting to the soil, that the tops are very exhausting, and should therefore be spread as evenly as may be and left to decay in the field.

Allowing something for exaggeration, the premises seem to be true, and the conclusion of some practical importance. The facts are, that the tuber draws largely, and the tops still more largely, upon the potash of the soil. Consequently the growth of both must be exhausting, but that of the top most so, on soils not over stocked with potash; but if the tops are left to decay on the soil, this ingredient is restored, and the whole result is not more exhausting (we believe this from experience as well as from reasoning) than the generality of crops.

While on this subject we wish to say, or rather to repeat, for we have said it before and mean to keep it before our readers, that in preparing for a crop of potatoes, unless the soil is known to abound in potash, this should be a prominent ingredient in the manure. The potato being a potash plant, not that it carries off a very large amount of that substance, but using a great deal of it during its growth, requires that the soil should be well supplied with it.

We lay claim to no specific for the potato disease, but we have long suspected that the exhaustion of the potash in old fields may have had something to do with it; and if the plant is ever to regain a complete ascendancy above the power of the disease, we are strongly inclined to the belief that it will be by supplying it plentifully through successive growths with this its favorite food.—Ed.

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## The Cranberry.

This fruit affords a delightful acid, and is most genial to the human constitution. A plentiful use of it by all classes, the poor as well as the rich, would improve the general health, and prolong life. But for years it has been so high in price, and so scarce, that even the rich have not been able to enjoy it. At the present time, we doubt whether it can be had for love or money.

Experience, we believe, has now decided that it can be grown on upland, and of a superior quality. But our own experience in keeping down the grasses among strawberries and other perennial plants, does not allow us to believe that it can be so grown remuneratively; and besides, we want our uplands for other purposes; and it seems to us that it would be bad policy to devote them to a crop which all, we believe, will agree, does quite as well on lands which produce nothing else of value.

With most crops, it is almost as fatal to have stagnant water a little under as on the surface. But this is just what the cranberry delights in. Now there are thousands of acres whose surface is but a little elevated above standing water, so situated that for the want of an outfall they can not be drained. The time will come when, by the lowering of the bed of a river, or by elevating the drainage water by means of machinery driven by water, steam or wind, these lands will be drained and become the best lands in the world. But that time is not yet. It will not be for long to come. We have no doubt that there will be an immense demand for cranberries. Their value is just beginning to be known. At ten, fifteen, and twenty dollars a barrel, few can use them. With fairly remunerative prices, everybody could use them plentifully, and they are far more conducive to health than the rich preserves which they would displace.

The cranberry requires a water meadow, with a few inches, from five to seven, of sand on its surface. Those who have meadows so situated that they can not well be drained, and which, by a juxtaposition of sand, can easily be covered with it to the requisite depth, would do well to establish cranberry plantations, small if they judge that prudent at first, to be enlarged as their success and the prospect of the demand shall justify. The spring is the best time to set them; but fall and winter afford a better time for preparing the land.

We propose, in an early number, to give a chapter on the best mode of establishing plantations of this fruit, and on its cultivation.—Ed.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Caution to Farmers.

It can not be too soon or universally known to agriculturists, that a new and fearful evil assails their interests in the wholesale destruction of frogs which threaten to exterminate, root and branch, the whole race of these ever active and efficient destroyers of noxious insects. Not only frog-eating Frenchmen hailing from all parts of the old world, but (mirabile ditu) frog-eating Americans, veritable Yankees, who having contracted this most unholy frog-eating mania, may be seen with their frog nets, hooks, and spears ransacking fields, meadows, marshes, ponds, and brooks, doing more mischief to farmers than all the owls, hawks, crows, foxes and wolves in New-England. The frogs, as well as the toads and birds which dame Nature has kindly provided to occupy our grounds, are worth their weight in gold, and indispensable to their safe-keeping and productiveness in counterbalancing and checking the increase of noxious insects which generate there by thousands and threaten the destruction of vegetation. They are indeed our chief defense in this respect, and he who wantonly hunts or harms them in these their own legitimate spheres of usefulness and self-enjoyment, is guilty of a wrong and outrage not only against nature but our own best agricultural interests. An intelligent gentleman from one of the interior towns in New-Hampshire, says hosts of caterers are overrunning our fields who, by paying farmers a few shillings, are allowed to take away all the frogs on their grounds, and even to command the services of farmers and farmer's boys in doing it, so that bushels and bushels are taken daily by the cars to feed the idle frog-eating gluttons of the cities. Among the strangest and most unaccountable phenomena of the present time, is the ignorance or indifference of farmers in studying and following up nature's plan for guarding against the increase and ravages of insects. There is now and then one wide awake on this subject, and their clean productive trees and grounds, and their abundant harvests fully testify to the fact. But how many, either through ignorance or blindness or greediness of temporary gain, act on the pound-foolish and penny-wise policy of killing the goose which laid the golden egg, and would for fifty cents allow sportsmen to shoot all the birds on their farms, and justify their folly by appealing to authority, as baseless and superficial as that of the scribbler who wrote a few weeks since in unqualified condemnation, even of the ever and everywhere consecrated robin, because forsooth it has occasionally, for a short week or two in the whole year, and in midsummer when its natural food, insects, are scarce, taken the liberty to wet its whistle and tune its throat to melody with a currant, a cherry, or a strawberry or two from his (the scribbler's) own little solitary bush, tree or vine. For this he fulminates, he explodes his one idea, and blazes lustily away to create a prejudice and a bad name for the total annihilation of a bird which, from early spring to latest autumn, is cheering us with his song, and ever busy and active in clearing our expansive corn, grain, grass and vegetable fields and gardens, and our boundless orchards and woodlands, of the hosts of vermin which would otherwise ruin their productiveness. Scout such contracted views and one ideaisms. The story of the yellow-bird which was killed and opened and found to be full of the noxious insects on which it feeds, has been the rounds, and is a fair sample and illustration of the subject. Similar results by similar investigations are found true of frogs, toads, and several varieties of field and garden snakes, which also benefit vegetation by the carbonic acid gas they are constantly exhaling; and farmers may be assured that if they suffer their grounds to be divested of the good services of these wisely-provided guardians of nature, whether through prejudice or a desire to gratify the capricious appetite of epicures and gourmands, they will soon have abundant cause to regret their imprudence and want of foresight.

E. Sanborn.

Andover, August, 1857.

## Western Emigration.

The following very sensible article, from the Yorkville (S. C.) *Enquirer*, applies equally well to emigration from the Northern and Middle States, as from the Southern.

From a glance at our advertisements it will be seen that there is now a large quantity of land for sale in our district. The mania for moving West has never been greater, although the crops promise to be abundant and provisions plenty. To those desirous of developing the resources of the State, this tide of emigration presents a picture altogether disagreeable. Its direct effect on the State will be, to retard the progress of that agricultural reform, which has been in agitation for the last few years. And it is questionable whether those emigrating will better much their condition. There are difficulties to be met, privations to be suffered, and risks to be run which should make men hesitate, ere they break up the associations of life, and go forth to tabernacle among strangers in a strange land. A mistaken view of the nature of wealth and the true objects of life, we imagine, influences many of those who are leaving forever the land of their nativity. A man who has the comforts and conveniences of life around him here, is much richer than any one can possibly be in the far West, no matter what may be his resources. For money is not wealth, any farther than it is the synonyme of all that is desirable or all that renders us happy. And there are many pleasures here which money can not purchase in the West. Years must elapse before social life can be fully developed, before convenient churches can be built, good teachers and good academies be procured, and all the appliances to make men moral, happy and intelligent, be put in operation.

Nor should it be imagined that fortunes are to be made in the West by any new and simple process. Industry and economy are the only honest paths to affluence. Circumstances may be favorable, but these qualities are indispensible requisities. The same negligence or indolence which has prevented them from securing an independence here, must wherever they go operate against them.

But let it not be inferred that we would check altogether the spirit of emigration. There are many in the older States who have no strong ties to bind them, no comforts to leave behind, no associations to make them cling to any particular spot of earth and repeat, with the fervor of Scott, "This is my own—my native land." To such the West proffers strong inducements. The cheapness of the land will enable them to secure homesteads with very limited means. To this class we would say, go. With industry and economy you can soon gain "the glorious privilege of being independent," for which the hapless bard of Scotia vainly sighed.

On our first page will be found an instructive article on this subject.

The following is from the article referred to in the last sentence.–Ed.

If those who immigrate to the newer States and territories would but apply the same energy they are obliged to use there to the renovation of the ill farmed lands of the Atlantic border, and would consent to wear homespun, to live in log houses, and, eschewing all luxurious appliances, be satisfied to live upon the products of the homestead, they could acquire a competence with more ease in settled neighborhoods than on the fertile and sparsely populated prairies of the great West.

Now we are not inclined to be critical upon the foregoing. We believe it to be true, that if young men will put forth as much energy and endure as many privations in the East as in the West, they will thrive as well, all along the coast from Maine to Georgia. But then it is a very different thing to endure privations in the East and the West. We would rather live in a log cabin, where our neighbors would look *out* of log cabins at us, than where they would look *down* upon us from tall houses; and if our sons must live in log cabins, much as we would like to have them near, where they could come home and see us of a *Thanksgiving* day, if no more, we say, let it be in Nebraska rather than in this State. Whether it is better to be first in a hamlet than second in Rome, we will not undertake to decide. But really, if we were a young man, with strong hands, we should feel quite inclined to go where we could live in about as good a house as the rest of the world thereabouts. In this we believe the editor of the *Courier* very nearly agrees with us. Moneyed men who love ease and social advancement will certainly do well to remain East, but young men, whose capital is in their energy and endurance, will benefit the country and themselves by "pushing out West."

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Buncombe County.

DEAR SIR:—I have for some time past purposed writing to you, setting plainly before you the advantages this place possesses, I might say, before any other part of the States. It is allowed that Virginia and North Carolina possess the best climate in the States, and for healthiness I believe Buncombe County exceeds all others. It has long been famous for the speeches of its representatives in Congress, nor has it fallen off in that respect. As it has been a by-word on that account, so it should be celebrated for the fruitfulness of its soil, the healthiness of its climate, the value of its waters, possessing chalybeate, sulphur, and warm springs. I am not going to inflict an account on you of all their virtues; but I will bring under your notice a few plain and established facts, such as can not be gainsayed or denied. But as to its fertility, N. W. Woodfire, Esq., one of our most enterprising gentlemen, three years ago raised 149 bushels of shelled corn from an acre of ground. Last year 18 acres of his crop produced 1800 bushels. He also last year, from a field of six acres, had 180 bushels of wheat, cut the 22d June, after which he planted in corn and raised a good crop, and but for the unprecedented early frost of the 23d Sept. would have had 50 bushels of corn to the acre, and off the same ground in the intervals had a moderate crop of turnips. The same six acres he has in corn this year, and I feel satisfied it will at least average 120 bushels to the acre. A Mr. Ripley raised a crop of excellent wheat last year, averaging 35 bushels an acre. From the same ground he had upwards of 400 bushels of excellent turnips to the acre. I could give you many more instances of good heavy crops of corn, wheat, rye, barley, oats, hay, potatoes, carrots, etc. I will only state that Mr. James W. Patten had 1100 bushels per acre, measured, of Irish potatoes. No country is better suited for growing fruits, I might say of all kinds; its apples and pears can not be surpassed in any country in the world, and its native grapes, the Catawba, for instance, has got a wide-world celebrity, and not without reason. I have cause to believe that there are a very great number of what may be called wild grapes, natives, fully as good and perhaps of better qualities. However, that is a matter likely soon to be tested, as that enterprising gentleman, N. Leveysworth, of Cincinnati, has taken the matter in hand. One advantage its climate and soil possesses, that I never saw the Catawba grape here, no matter what season, either mildew or rot, and where in Ohio this year such is the case to a great extent, we are free from any thing of the kind.

Dr. Samuel Dickson, of Charleston, S. C., has often said the climate of Buncombe is superior to any other part of the world for consumptive or delicate persons; if they can not live here they need not go elsewhere for health. I don't want it too generally known lest all the sick might flock here, and some might die and give the place a bad name; but you may, if you please, let any of your friends know it. I believe for good farming there is no country better fitted to repay the steady, enterprising farmer. For a wine country and the cultivation of the grape, it can not be surpassed—the greatness of the neighborhood is proverbial—and if we had a railway so that its advantages might have a chance to become known, few places could compete with Buncombe. But the narrow-minded jealousy of the Eastern members to the State Senate and House of Representatives has hitherto withheld from us such a privilege—so narrow-minded and selfish as to be a disgrace to any State or people.

The Chinese sugar cane promises exceedingly well. Seven or eight gentlemen here have sown largely, and an intelligent West India sugar planter of great experience informed me yesterday he feels no doubt of being able to make sugar of the very best quality from it. I have told you a few, very few, of the many advantages of Buncombe. If I stated half, this communication would be so long you would reject it. Should any of your friends require any further information, I will be happy to give or procure it, and they may rest assured they shall hear nothing but the truth. In sheep and cattle raising, the land and climate is most favorable; and the osage orange grows so well that the expense of fencing is decreased four-fifths—a matter of no small consideration to the farmer. Believe me, yours respectfully,

ASHEVILLE, August 26, 1857. W. M.

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*Remarks.*—It must be confessed that our correspondent goes it strong for Buncombe. Eleven hundred bushels of potatoes is the largest yield by 100 bushels we have ever heard of. A farmer in the Green Mountain State was once reported to have grown a thousand bushels. He was said to have raised them in this way:—Ploughed the ground, harrowed it thoroughly, sowed the seed-potatoes broadcast plentifully, and covered with a composition of chip-dung, leaf-mould and yard-manure some five or six inches deep, and then let them pretty much alone until harvest-time. Whether the Vermonter ever grew 1000 bushels to the acre, we do not know. If he did, he must have grown $1\frac{511}{1088}$ pints, or just about a pint and a half to the square foot. Will some of the boys see if we are right? In the olden times, when old fashion whigs and potatoes were both rampant in that State, it might be done, but we do not believe it can be beat in these times except in Buncombe county, N. C.

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## Speculations on the Origin of Plants.

BY DAVID RICE, M.D.

I. *Natural Laws.*—There are certain fixed facts known to philosophers existing perpetually the same, always operating in the same way, pertaining to things in nature that are styled "Natural Laws." Attraction of cohesion is one;—it brings together the particles of bodies and holds them in union. Gravitation is another;—attracting all matter to the center of the earth. By the power of gravitation, bodies fall to the earth, or arise to a stratum of air of their own density. It is a law in chemical attraction, that elementary principles unite in certain definite proportions. Oxygen and hydrogen unite thus and form water. Oxygen unites with a mineral, forming an oxide or an acid. It is a law that particles of matter, united in a certain way, form an opaque body. Again, united in a more perfect manner, the body is crystalline or transparent, or becomes resolved into geometrical, perfect forms, such as a cube, or a hexagon, or an octagon. These we call natural laws.

II. *The laws of nature are the fixed will of God.*—All the fixed laws of nature, as well as the constant exhibition of chemical affinities, both in the animal, vegetable, and mineral worlds, are nothing more nor less than the operation of the will and wisdom of God. These phenomena we are too apt to regard as merely scientific facts, natural and matters of chance in themselves. But however we regard them they are no less the operations of the Divine mind, and in all their methodical complicity and beauty, in their immensity of scope and constancy of operation, they reveal only the original, the immediate, the eternal will of God! He spoke, He speaks; it was, and it is done.

III. *Operation of natural laws in the formation of the earth.*—There is no doubt but that the Creator worked methodically, bringing these same natural laws into operation in the creation and formation of the globe on which we live. In the immensity of space, two or more loving affinities joined hands, and from the great gaseous realms of chaos, manufactured a particle of matter, and yet another. Attraction of cohesion united them together. The nucleus of the earth was formed, and the great operation went on, particle uniting with particle, until, rocked in the cradle of infinite space, the infant globe became a full grown world, created and governed by the methodical workings of divine wisdom, which we call Natural Laws. Without saying a word in regard to the phenomena and changes that must have occurred during the countless years anterior to the time when the earth was prepared to sustain vegetable life, the time did come at last. And I believe that the Creator observed the same beautiful method, working by natural laws, in the creation of vegetable life as in the formation and development of the earth, and as in all the great and admirable operations of nature ever since.

I do not believe that God spake into existence, in a short period of time, vegetable life and forms in all their variety and maturity. I do not believe that the earth was clothed "in a day" with verdure, that the valleys waved with grass, and the forests teemed with full grown trees. Why should God work by miracle in the formation of plants, more than in other formations? I believe that *seed* was first created, and that the first vegetable form sprang from seed. Vegetable forms, at first, no doubt, were very few, such as the earth was fitted to sustain—the fungi, the mosses, and the ferns; but I believe they all sprang from germs or seeds, of whatever variety, in the *first instance*, and that those germs or seeds were eliminated, created, formed from the immediate elements existing in earth or air. Analyze seeds and you resolve them back into elementary principles, always found in earth or air. It was no more for the Creator to form seeds from elements ready existing and immediately at hand, than to form full-grown oaks or shrubbery, as some suppose he did. Natural operations are constantly going on in the deep laboratories of the earth, eliminating earths, ores, and precious stones in all their beautiful and perfect forms. In the formation of these God works by fixed, natural laws. Was the formation of seeds more difficult than the formation of diamonds, or rubies, or pearls? I think it far more rational to suppose that Our Creator, in the gradual clothing of the earth with vegetable life, first formed seeds or germs, than to conclude that it was done by miracle, as many suppose.

My speculations may appear to many somewhat dogmatical, but I feel that they are at least as rational as the "Miracle theory."* "Method," I was almost tempted to say, was another attribute of God. The formation of worlds, and the laws which govern them—all the phenomena of earth, of animal and vegetable life, are born of method. With Him, method is eternal. Miracle, in His works, never appeared as a fixed, creative agent; but only to instruct, convince, or punish mankind. Method is and ever was, with Him, a fixed and eternal purpose, by which he creates and governs, originates and brings to perfection. Reasoning then from analogy, and form a comprehensive view of the ordinary operations of "God in Nature," we may safely infer that plants may have originally come from germs or seeds.

LEVERETT, September, 1857.

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* We have not the least wish to enter into any theological speculations which may be suggested by the above. A word, however, with regard to miracles. What is a miracle? A miracle—miraculum, wonder, something that astonishes—is simply a thing out of the common course, and is no more an exhibition of power than the ordinary operations of nature. If you admit with the writer of the above, as we most certainly do, that all things are of God, that the operations and results of nature are his works, so that, when an ear of corn matures in the field, by a slow elaboration of its materials from the soil and air, we have just as much occasion to admire the Divine power and goodness and to be grateful, as if God had created it for us in some new and strange way instead of the old and common, then you must admit that a miracle differs from the other works of God only by being out of the common course of things.

If a sick man, almost too feeble to move a limb, should all at once rise from his bed, bid his doctor and nurse farewell, and go to work in his field, that would be a miracle, a miraculum, a most astonishing occurrence. But if under the influence of medicine, kind nursing, and genial food, he should go through an agreeable convalescence, happy every day in being a little stronger, grateful to his God, his physician and his nurse, till at length he should find his health restored and his age renewed, would not the result be the same, and would not the only difference be that in the latter case a beneficent result was reached in a very common, and in the former, in a very uncommon way?

So, if God should in an instant create a mighty oak, or a wide-spread elm, or a luxuriant fruit tree laden with fruit, would it imply more power, more beneficence, or more of any attribute, entitling him to our reverence and love, than the way in which he is creating millions of oaks, and elms, and fruit trees all the time? We can not see that it would. Some people are terribly afraid of new truth, lest it should circumvent the old, as if all truth were not consistent with itself. No truth can discredit the truths of the Bible. No knowledge of facts, as they really are, can be dishonorable to God. Whether the sun goes round the earth or the earth goes round the sun, it will do no harm for mankind to know it. What a pity that Gallileo's persecutors could not have known this. It would have saved the good man both pain and ignominy.

It would be so, if it should yet be shown, that God originally created all things by the slowest possible process; that he did not create full grown trees at once, nor seeds even, nor germs, but only by an aptitude in matter, under fitting circumstances and regulated by his own laws, to produce trees and the various plants which have sprung and may yet spring into being. This idea makes God no less the Creator. It represents him as the perpetual Creator. We teach no such doctrine. We are ignorant. We don't know why the fireweed springs upon the burned fallow. We don't know why, on earth thrown from the bottom of a well, plants spring up before unknown to that region. We don't know why, after the pine, oaks spring up where it seems next to impossible that acorns should exist in the soil. We know not whether God created the world and everything on it in an instant, or whether he wrought billions of years before the work could fairly be said to have begun, and is working yet, and will work on, a perpetual Creator. We only say that some facts are more easily explained on the latter theory; and that if it is true, the world will not be harmed by knowing it; nor will the least injury come from so far suspecting it to be true as to induce candid investigation, even if it have no foundation in truth. It is high time for mankind to learn, what but few have yet learned, that two persons may think very differently, and that on the most important subjects, and yet both behave pretty well. —Ed.

FOR THE AMERICAN FARMERS MAGAZINE.

## Ethics in Agriculture.

MESSRS. EDS.:—The worth, dignity, and influence of classes in community depend not as much on the skill and dexterity, with which their peculiar business operations are conducted, as on the reputation they win and the character they sustain in regard to moral principle. No enterprise or pursuit can stand well in general favor, or reasonably expect approval from the judicious and discreet, the men who ordinarily give tone to popular sentiment, which bids defiance to the acknowledged laws of moral right and wrong. This social characteristic is essential to all that is estimable and truly desirable in human life. And since a good deal has been said, at one time and another, about elevating the standard of respectability in the farming interest, as compared with other professions, the topic seems to be fairly initiated into the routine of subjects which resort for discussion to such journals as the *American Farmers' Magazine.*

And as most that has hitherto appeared in publications of this sort, has, as far as I know, been directed towards the economical, I see not why it may not, properly enough, devolve on me to venture a word or two on the *morale* of the thing, it being a concern of such magnitude and extent.

The grand and all-absorbing question among tillers of the soil seems generally to reach no further than to the mere matter of pecuniary profit. Will the crop I contemplate *pay well* for the labor and cost I am about to bestow on it? Will the market receive the product and make me a generous remunerative return? In what kind of cultivation shall I be likely to find my best money account?

Now, Mr. Editor, in all soberness and honesty, let me ask, Is this properly the decisive consideration which is to prevail and overrule all others? Is no respect to be had to the interest and the well-being of those who are to be consumers of the articles prepared for them? Is it enough that the producer is compensated to his heart's content? Is his responsibility bounded by the gains which are to accrue to himself alone? "The earth is the Lord's and the fulness thereof;" and has he put it into the hands of the cultivator to be used by him as an instrument of life or death, as he may arbitrarily and capriciously elect? If man has a conscience that is at all alive to moral distinction, he will not suffer himself to be seduced or allured into any appropriation of the soil for the production of a bane, how high soever it may stand in the market, or however loudly called for by the victims of an appetite, which knows not how to refuse a drug pregnant with poison and death.

Having said this, let me in the name of the farming community, which I delight to honor, enter a decided protest against any desecration of even the least portion of American soil for the vile purpose of raising tobacco, that insidious enemy and destroyer of health and corrupter of good morals. Let that nauseous, that worse than useless weed alone; and let us use our lands for such increase as will afford plenty of wholesome nutriment, good bread and meat, together with needful covering for our bodies, and all this made doubly valuable by by additions of a "conscience void of offence towards God and man."

J. F.

*Remarks.*—We would dissuade everybody, if we could, from the use of tobacco, because we believe that all, or if not all, at least an overwhelming majority of those who use it, would be healthier, stronger, and longer lived without it. Their companionship would be worth more to their friends. They would enjoy life better, and be more useful. Their children would be happier and live longer. This will seem extravagant to many, but we do not say it without having looked at the subject long and in all its bearings; and we are just as well convinced that the general, habitual use of tobacco tends to the deterioration of a race, as that plenty of food, suitable clothing, sound education and reasonable labor tend to its elevation. The ethical bearings of the subject we leave with our correspondent. It would be easy to anathematize him and his arguments. Whether it would be easy to answer them, others must judge.

On the tendency of a free and general use of tobacco to deteriorate a people, we will say (not without some hesitation, because it may seem to imply an indelicacy of which we ought not to be guilty) that no sensible breeder of stock would endure that those animals, which are to be the fathers of his flocks and herds, should wear a seaton in the mouth or be made to drule constantly from any other cause; nor that their nostrils should be stuffed with Spanish flies or other substances to irritate the membranes and produce an unnatural sneezing; nor that their heads, trachea and lungs should be smoked half a dozen times a day. He insists that they shall be in *condition*—no ailment, no symptom of disease, perfect health. He would mourn if his favorite Eclipse or his Duke of Cambridge should betray a foul breath. *He is wise.*

How is it with those who are to be fathers of our grandchildren? The general, the *habitual*, the EXCESSIVE use of tobacco augurs badly. There is no use in closing our eyes to the fact. But enough has been said. Think out the rest.—ED.

## History of Fine Wool Sheep.

The following, which we extract from the speech delivered by Hon. J. Collamer, "on the Tariff and Wool interest," in the U. S. Senate, February 26th, will be found highly interesting to all classes of readers, and especially to sheep breeders. It is in reply to the suggestion of Mr. Hunter, of Virginia, that we did not raise fine wool in this country.—*Vt. Watchman and State Jour.*

There are no fine wools in the world, raised anywhere on this earth, which are not all from the same family of sheep. By fine wool, I mean such wool as is sometimes called spinning wool, which is spun and wove into broadcloths and kerseymeres, especially those which are required to take a finish; that is, after they are woven and fulled, there is a face raised upon them, by either carding or teaseling, and then they are sheared and pressed and calendered, for the purpose of making a finish on them. That can be done only with fulling wool. Now, where do the fulling wools come from? I say they are all from the same family of sheep.

At the period of our earliest acquaintance with Spain, there was found a certain breed of sheep called merino sheep. We do not know how early they were there. We have seen inklings that they were there at as early a period as the Romans had control of the country. Where they came from we know not; but the word "merino" means "over the sea," and it was connected with the idea that these sheep came over the sea, so that probably they were not indigenous to Spain originally. This is the family of sheep out of which all the fine wool sheep of the world were produced. For a number of centuries these sheep were entirely owned by the nobility and royal family of Spain. They were pastured and driven north in summer, and south in winter, so that they were always kept on green fields. They were kept in large flocks. They roamed South into Andalusia, and north into Castile. For many centuries men were prohibited, under the most severe penalties, from carrying any sheep out of the kingdom. A man who exported a sheep was sentenced to the galleys for life. None of these sheep were obtained in the rest of Europe. In 1784 or 1785—I will not be exact in the date, but at any rate between 1780 and 1790—the King of Spain gave a flock of these sheep, forty in number, to George the Third. The English King gave him, as a royal present in return, six English coach horses. These sheep were placed at Windsor, under the care of Sir Joseph Banks, and the utmost exertions were made to induce the use of that kind of fine sheep among the farmers of England. To this day, England does not raise a pound of wool out of which you can make a yard of broadcloth that any gentleman in this house wears. For a long time all her fine wool has come from abroad. After Spain went into the business of digging gold in South America, all her wool was exported to England, there manufactured, and sent back to Spain to be sold, and they dug gold to pay for it. The result has been that, while they have run down, England has run up.

I wish to show why that flock of sheep did not succeed in England, and to show the difference between their condition and ours, to see why fine wools succeed here and can not there. At the same time that that present was made to George the Third, a similar present was made to Louis the Sixteenth. The flock given to the King of France was put on the Ramboullet farm, which was then the royal farm, and is still, Bonaparte having always kept it. That flock of sheep, bred in, as I shall hereafter mention, is the French merino of the present day.

At the same time, the same present was made to the Elector of Saxony. The flock which went to the Elector of Saxony was attended to, and selected all the time for the finest wool, without regard to size. The French selected with regard to size. The Germans selected for fineness of wool merely. The flock given to the Elector of Saxony is the basis, the origin, the parentage of all the Saxony wool of the world, now to be found all over Bavaria, Silesia, Hungary and Russia, and this country—as I shall directly show.

About the latter part of last century, there was introduced into England that branch of farming called the turnip culture, which is the basis of prosperity to the English agriculturist at the present day. Everything in England which sustained human life, everything that the people could eat was very dear, as we all know, until a recent pepiod, since they have taken off their sliding scale of duties on wheat, and allowed foreign provisions to be introduced for the benefit of manufactures. The turnip culture was this; they sowed a large field, especially on the downs of England, with turnips—generally the Swedish turnips—and then in the fall of the year they would put upon the turnip fields a flock of their native long wool sheep—the best improved breeds of which are the South Downs and the Leicestershires. Those sheep ate the turnips on the ground. There was no gathering them —no cutting them up. When they exhausted one field they went to another, and so on through the winter. The climate being mild, they wintered in the fields on the turnips, and were in a fine condition for mutton in the spring. A mutton sheep in England, at that day and now, averages from eighty to one hundred pounds dressed off. The French merinoes, with all the improvements they could give them by breeding in, do not average more than forty pounds dressed off. The mutton of the English sheep would command in the British market, and has all the time for thirty years back, from ten to twelve cents a pound. It is a very superior mutton.

That is not all. When a piece of land in England had been tilled in the manner I mentioned, and the sheep herded upon it, it would produce twenty- two bushels of wheat to the acre, and that wheat averages from two dollars to two dollars and fifty cents a bushel in England at all times. Bearing these facts in mind, you will see how fruitless was the attempt to introduce into England these little merinoes, small sheep, which shear about three pounds and a half in their natural condition as they came from Spain. Even the French merinoes, as they have improved them, yield but six, and ours from three to three and a half or four pounds. The farmers were told by the nobility, "The King has made me a present of some fine wool sheep, and we want you to attend to them, so as not to be dependent on foreign countries for our supply of fine wool." The farmer saw at once that the wool from these sheep would not bring him more than two shillings sterling a pound for three pounds, while the long wool sheep would shear eight or ten pounds of wool; and then the inquiry was, how much will that little sheep bring for mutton? Not a cent. You can never make valuable mutton of it. In Vermont, where we have so many fine wool sheep, our people use little or no mutton, though we have a little lamb occasionally. I never saw any mutton there that compared at all with the Virginia mutton which I see here. Indeed, I am reminded of an anecdote of an old neighbor of mine who was rather fond of mutton. He used to talk about these little merino sheep, and said, "When you got a quarter of it dressed off, you could see the light between the ribs. In good old times, when we had the large sheep, a man might go out and steal a sheep, and bring home something for his family to eat, but now, if you bring home one of these little merino sheep, you might as well have a tin lantern to eat." [Laughter.]

[CONCLUDED NEXT MONTH.]

FOR THE AMERICAN FARMERS' MAGAZINE.

## A Trifle.

Farmers are a class who should regard more than others, the smallest trifle. Yet how many we meet who disregard the small things, and deem them unworthy their consideration. Men of trade learn, from experience, to treasure up the items and fragments, as it is from those alone that they obtain their living and accumulate their fortunes—from saving as well as from getting.

With farmers it is different; they look upon the vast fields of grain and count the proceeds to be obtained from the crops now being harvested, and overlook the waste occasioned by the carelessness of their workmen. The crop is estimated by the hundreds of bushels, and not by the ear. A thought is not entertained that bushels are made of the smallest kernels.

In times when grain of all kinds was cut with the sickle, it was gathered much cleaner than by the processes now employed; yet an instance is related of a boy who ran after the reapers and picked up, straw by straw, what was dropped. It took some time to gather a handful, but gradually that swelled to a large sheaf by the addition of straws. So astonishing was the success of the boy, that the man from whose land the grain was gathered suspected something was wrong, and accused the lad of appropriating to his own use from the already gathered grain, but was assured by the reapers that such was not the case, and was induced from the circumstances to try it himself, and he asserted that he could gather enough to pay his men! It is no less astonishing than true.

By the above illustration it is not meant that farmers could or should adopt the plan of saving all the grain that may be wasted; but only to serve to picture out the necessity and utility of saving in everything. Many things there are which go to waste because people do not consider their importance. Those chips which are allowed to lay there and rot, would warm the hearthstone of a dark chamber in the crowded city, and perhaps save many from suffering, and as a necessary consequence, suppress crime. On this subject there is room for much speculation. To specify all the things in which a saving could be affected, would occupy time and space to no consequence.

Some people think they have learned to perfection the art of saving; but there is one thing which demands their consideration: They save in quantities and don't mind a trifle. O. A. Gould.

Watertown, N. Y.

## Sorgho in the South.

Judge De Lyon states in the Savannah *Georgia*, as the result of his experiment, that an acre of the cane will produce three hundred gallons of syrup, twenty-five bushels of seed, of the average weight of thirty-five pounds, and twelve hundred weight of fodder. He is also convinced that the syrup, by proper management, can be made to granulate. On the same subject, an experiment stated in the Chester (S. C.) *Standard* gives six hundred and twenty-five gallons of the syrup as the product per acre. Thus far the reports vary from one hundred and fifty to six hundred gallons. The Charleston *Standard* thinks the average will be finally settled at four hundred gallons.

One planter in Louisiana will send to the New-Orleans market this fall about three hundred barrels of sorgho molasses, and will put a large part of his plantation in the cane next year. It is his opinion that it will form a staunch ally to the old sugar cane.

It will be a strong spoke in the wheel of Virginia agriculture if every farmer can make his own sugar and molasses, besides an extensive addition to his forage, which is always in demand, and of which the supply generally runs short towards spring.— *Winchester* (*Va.*) *Republic.*

We suggest to our Virginia friends that the supply should not run short with the same man but once in a lifetime.—Ed.

## Menhaden Oil.

Menhaden, or "pogies," as the fishermen call them, are a species of fish which swarm in millions along our shores in the summer season, and although formerly used only for bait, they are now caught in large quantities by the "down-east" fishermen for the manufacture of an oil which is valuable for dressing leather and other purposes. This business, as we learn from the Bangor *Whig*, is now an important and growing one, producing many thousand dollars annually, with a large profit. They are taken in nets in large quantities, boiled in a large kettle fitted up in a furnace at the shore, then passed into a press constructed like a cider press, and the oil pressed from them. It is then barreled up and sent to the Boston market and elsewhere. When the fish become fat, they yield a gallon or more per hundred, (the fish being about the size of an alewive,) or a barrel of oil from 2500. The fishermen sometimes take from 1500 to 2000 in a single net set over night. The oil was worth $20 per barrel last year. This year it is not worth quite so much—say from $15 to $18—but it pays a large profit at that. The refuse or "chum" left, after expressing the oil, is used for manure, and is said to be almost equal to guano.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## The "Old Fogy."

VERY few farmers come under this title, yet we know some who still use the old-fashioned "bull-plough," because their fathers or grandfathers did! Such a man may be called an "old fogy." An old fogy imagines he has an independence of mind. He will not listen to reason, because he thinks *he* knows quite as well how to manage his affairs as the inventor who claims superiority over the old-fashioned instrument which the fogy continues to follow. An old fogy has his eccentricities, odd habits, vague ideas, notions, proverbs, and steadiness. He always follows the same plough, swings the same scythe, and always uses that fork with the "tine bent," milks the same cows, and, in fact, steps in the same tracks throughout the entire year, turning neither to the right hand nor left.

The old fogy always makes money. Perhaps not so fast as his neighbor; but he invariably dies rich, though he never lived happy. His life is a constant, unbroken monotony, which, if once disturbed, renders the victim unhappy. Don't be a fogy. There are other and better ways to acquire property. Would you live for yourself alone?

WATERTOWN, N. Y., 1857. O. A. GOULD.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## "I'll Give so Much, and I'll Take so Much."

NO. I. I'LL GIVE.

SUCH is the language of the merchant, I care not what grade of merchants he belongs to; whether he uses a basket, a wheelbarrow, a cart, a stall, a shop, a warehouse, a counting-room, or a bank. All are the same—men that live by buying and selling. This class of men at present are the ruling class of the nation. It is the merchant who regulates the price of all articles of commerce, not only in dry-goods, groceries, etc., but on everything the farmer has to sell. He regulates the price of grain, of beef, and of pork; the producer, the farmer, who is the foundation of all other business—I say the foundation of all other business, because when the farmer ceases to exist, all other business must forbear—he has no say in the market. Why is this? The farmer, for the last five hundred years, has been nothing but an "understrapper," a despised class of people; if the men have not been, their profession has. But a short time has passed since he was thought worthy to have a voice either in Church or State. If a young man wanted to be somebody in the world, he must be a lawyer, doctor, or a merchant. The stigma is not all gone yet. There is something in the word *farmer* that is despised, especially by the young of both sexes.

Why? because the word "*work*" can not be stricken out. It is joined to farmer, and is as immovable as the Rock of Gibralter. If a young man farms for a livelihood, he must expect to have his hands tanned by the sun, and to get his shirt bosom "dirted in the bargain;" kid gloves and starched collars seldom, if ever, raise much grain. Black boots and superfine broadcloth pants seldom dig potatoes in the mud.

A farmer goes to market with a load of grain; when he enters town Mr. Land-Shark is there, meets him in the street and says to him, "Is that grain for sale?" "Yes." "What do you want for it?" or "What do you expect to get for it?" "Money," is the reply. Mr. Shark says, "I'll give you so much; it's more than you can get any where else in town." If his load is wheat, Shark's offer is fifty cents per bushel, he tells him that wheat is "down, the market is full." Farmer says, "That is low; can't you give a little more." "No, I can not afford it; I shall loose on it at that, but to accommodate you, I'll give that." Shark knows all the time that he is telling a falsehood as regards his "loosing on it." Farmer, instead of selling it to the consumer, like a fool tells Shark that he can have it at that price. Shark, instead of "loosing on it," sells it to the consumer at one hundred per cent profit. A scene like the above I saw in Fort Des Moines but a short time within the present century.

Another case. A boy of some seventeen years came to town with a load of some thirty watermelons. He no doubt had worked hard in planting, hoeing and taking care of his "patch," in order to get a little "change," perhaps to take a "spree" with his young "belle" of the prairie. Being unused to the customs of town, and in a hurry to get home, he too was met by a young shark or a clerk, and asked if those melons were for sale. "Yes," was the reply. "What are they worth," says the boy. "We can afford to give you one dollar for the lot; they are large, nice melons, but the market is full, and they are dull sale; that is the best we can do; you can't hardly sell them in town; we are paying the highest price of any one." The boy believed him, and sold his melons. He thought that the clerk had told him the truth, and he believed him. After the boy had gone, I stepped into the store and asked what the price of those melons were. Fifteen cents. I asked if melons had not taken a rise. "No; they cost us nearly that." I do not say that all merchants are of this kind; there is now and then an honest merchant. The above cases that have been referred to, are of common occurrence among what are called "middle men," men that stand between the producer and the consumer. These "middle-men," instead of being a blessing to community, are a curse; they are the ones that make the "money," and if they can not get it honestly, then dishonestly.

Merchants are as necessary for the transacting of business as any other class of people, but "middle-men" are drones to society. Messrs. Editors, how long must this mode of swindling be practised upon the farmer? Until the farmer gets his eyes open. How is he to get his eyes open? It is through the press, the agricultural press, by reading such works as the *Am. Far. Mag.*, and by exposing such modes of doing business as the above. Who is the most to blame in this swindling business, shark or farmer. Shark is to blame for telling a falsehood, but farmer is to blame for several reasons, these reasons I will explain in my next number.

Mr. Editor, if you think these few lines worthy of publication, throw them to view among the farming class. The *Am. Far. Mag.* is the farmer's friend, and such things should be exposed. They are the truth, it can not be denied. You are at liberty to make such comments as you deem necessary, and I hope that the farmers will look to their own interest, expose such things to the world—read and inform yourselves. L. S. Spencer.

Lynn, Warren Co., Iowa.

We shall avail ourselves of the liberty given—should take the liberty whether or no—to comment on the above.

1. Our correspondent's definition of merchants—"all who live by buying and selling"—is good, is true to the letter. Our mercantile friends in the city plume themselves on being a very select class; and it is true that in their banking houses, their exchange offices, their tall stores and their gatherings about Wall street to raise and to cheapen property at pleasure, they appear like very gentlemanly men; and you would certainly suppose they had no design to cut your throat or pick your pockets. And then they know a good many things, though it must be confessed that their knowledge is mostly about matters of mere effemeral interest, things of the day and not worth remembering till to-morrow. And when we take into account that all

the petty dealers and tricksters, the agents, the drummers, the hateful and hated middle-men, all who buy and sell for a living, are part and parcel of the mess, we think they have no great to brag of as a class. We may as well put each man of them to trial on his own account, from the bank director who eats a great dinner at five o'clock, and the over-grown rum-dealer, who mourns that his daughter should be of so low instinct as to fall in love with a common chap, down to the poor news-vender, who eats a cold potato when he can get it, and is glad to have anybody marry his daughter who will take good care of her. If any of the kit and kin will do an honest business, that harms none, and is of general utility, let us honor them. Otherwise, let us think them scamps, as well as if they figure in Wall street and cheat the honest workers out of millions, as if they sell bad fruit by the street side and cheat the buyer out of pennies. This is the best rule we know of for judging of the class—to put each upon his individual responsibility.

2. We can not quite agree with Mr. Spencer, that the merchants control the prices of every thing, and that farmers have no "say" in the matter. It is the farmer's business to look after the market *prospectively*, and to cultivate as far as may be such things as will be wanted. In this way the intelligent, far-seeing farmer, though he *says* little, *does*, nevertheless, what will more or less influence prices. Commerce does not alone fix the price of every thing. Commerce does not desire fixed prices. It prefers that prices should be ever changing, up and down, down and up, even and round, here, and there, and nowhere, like the angler's bob on the wavy stream, because the merchant is sure to out-wit the producer in such fluctuations, if not in every instance, yet in a great majority of instances. And then if he gets bit now and then at his own tricks, he can wipe out all former obligations with a very soft sponge, and begin anew, just as good in Water street and along the wharves as if he had turned no somerset by and for the benefit of his own brains. That mercantile contrivances and connivances are always shuffling prices, to the great detriment of the laborer and honest holder of property, is quite certain. This effects the farmer—sometimes favorably, but generally very unfavorably. At one time it makes produce higher than it would be, by the natural law of supply and demand, and then the farmer profits by it, if he happens to hold the article in his own hands. At another it depresses the price below where it ought to be, by the same law, and then the farmer is pretty sure to loose. The merchant ascertains sooner than the farmer whether the tendencies are upward or downward, and of course he has the advantage, and his very instinct, keen as the scent of a blood-hound, leads him to use it. It will always

be so, as long as our present banking system, and a consequent overgrown credit system, exists. Any bank in this city *can* make a particular butcher rich in a few days, partly at the expense of the farmers and more at that of the New-York eaters of meat, and they *will do it*, if that butcher happens to be the friend of an influential director. The banks make a great many men rich; and that would be a good thing, if they did not make a hundred laboring men poor, while they enrich one sharper. It is with farm produce generally, as with butcher's meat. Banks and sharpers are always making it more precious with the consumer than with the producer. How many produce merchants are there to-day in this city who burst up in other business ten years ago and left their creditors to go *whistling*, who are now worth more money—not worth more, but worth more money—than all the farmers together, who have grown all the produce they have bought and sold? They are not great men, don't know much, but know one thing well, and that is how to make a tub of butter or a fat cheese cost the consumer about twice as much as it brings the producer, i such a way that they get the lion's share of the difference, and give the ass's share to the carrier. That is our idea of commerce; and a long as our bloated credit system, giving to sharpers, not worth a red penny, millions to speculate with to the detriment of better men, lasts, there will be a few honest merchants doing a useful business, worthy of all praise; but the great body of those who buy and sell for a living, will be scamps, and they will live and some of them get rich at the expense of honest men.

3. The story of the man selling his wheat and the boy his melons, is a very good illustration. It shows how the merchant *sells* the farmer. But courage, friend! It does not prove that the farmers of the country are all dolts. Much less does it prove that they always will be. There is a better time coming. There was a time when we bought all our manufactured goods of other nations. There were no consumers of agricultural produce among us except those who grew it, and no money came for the produce that was put into their own mouths It was then that the farmers learned that they were underlings. How could producers without a customer be anything else? But now we make half of our own iron. We make nearly half of all our manufactured goods. The farmer begins to have a few customers about him. The times are better for him; and they will be still better when our government wakes up, as it assuredly will, sooner or later, to its obligations to the great agricultural interest, so far as to inaugurate measures that will give to the American farmers the feeding of the men who make their coats, log-chains, bed-blankets, etc., etc. Let us look at the question, whether we shall supply our own wants or depend

upon other nations to supply them, not as partizans, not in the light of stump speeches which we may have heard, not as the abetters of some theory which we may have taken up hastily about its being cheaper to buy than to make our own necessaries, but as farmers, as men capable of thinking for ourselves, who mean to be at least on a level with the rest of mankind, and who *will have*, yes, WILL HAVE the profit of feeding the makers of our sheep-shears, case-knives, wearing apparel, and what else we want.—ED.

# Horticultural.

## Preparation of Soil.

IN the cultivation of the garden, as of the farm, the first thing is to select the locality for a particular crop, or for a permanent object, as that of a garden, for instance, and to prepare the soil.

After all the divisions of soils that have been made, they may for all practical purposes be reduced to three, *sandy*, *clayey*, and *loamy*, in the first of which *sand* predominates, and in the second *clay*, while in the third sand and clay are happily blended in about those proportions which render them desirable to the cultivator.

A loamy soil is to be preferred for gardening purposes. Choose such a soil, if you have it on your farm, and in a location suitable for the garden. But remember that the garden is a part of the homestead; it is to be beautiful as well as profitable; its elegances and luxuries are to be on hand and not afar off; it is to adorn your dwelling, as your dwelling is to adorn it; is to be the rendezvous for many a social enjoyment, earlier in the morning than you go to the broad field, and later in the evening than you return from its weary labors.

If, then, your buildings are already erected, or even if the ground for them is chosen, you have no great range for the choice of a "garden spot." If the soil, where as a matter of taste and convenience you want to meet your wife and children and friends, among flowers and fruits and esculents, is not a feasible loam with a porous subsoil, one that will both stand the drouth and drink in excessive rains so readily as not to keep the surface long flooded, you must make it such. The expense will be considerable, but it will pay, and you can not enjoy the pleasures and profits without.

An expense may be necessary which might well alarm you, if it were to be applied to your whole farm. But what is it for an acre, or half an acre? Nothing compared with the substantial benefits promised, to say nothing of the exquisite pleasure. If the soil is so exceedingly refractory that it can not be made deep and mellow and rich, without a very great expense, it might be well to content yourself with a smaller garden than you would otherwise cultivate, though as a general rule we believe the gardens of our country are too small, and should be enlarged rather than diminished. If the mechanic or the professional man has but the six-tenth of an acre, it is worth a great deal, and we would advise him to make the most of it. But why should not the farmer, who has land enough, take a generous piece for a garden ? Of all that the garden produces, there is scarcely an item which he can not dispose of advantageously, if he have a surplus, either by sale, or by giving it away, or feeding it to stock. An acre is perhaps better than more, because if the enclosure is too large, it may fail of getting cultivated so well as to be ornamental and highly productive; and half an acre is certainly better than less, because the person who but half appreciates the economical and ornamental value of a garden, can not do all he would desire on less ground. An acre, with fruit borders occupying one-half, and leaving an oblong or square half acre for the garden proper, would be to our mind, and that whether the farm of which it were a part were thirty acres or three hundred.

If your soil is a medium loam, and has a porous subsoil, you have nothing to do in the way of preparing the soil but to plough 10 or 15 inches deep, harrow, grade, plough again, and work in a plenty of good barn manure, so incorporating it with the soil that it shall pervade every inch, and you are ready to set your trees and make your garden. But suppose it to be a stiff instead of a medium loam, a few loads of sand in addition to the manure will effect the requisite amendment. Or if it is a light, sandy loam, then a few loads of clay will make it just what you want. And the cost in either case will hardly be worth naming. If instead of being a loam, a little too stiff or rather too light, it is a sandy soil, then clay in addition to manure is all you want to make it just what you would have it. The more sandy the more clay will be required. Or if your soil is the stiffest clay, sand enough with manure will make it as good a loam as you can desire. Where clay is used as an amendment, it should always be exposed to the frosts of winter before ploughing in, and should be thoroughly incorporated with the soil; and even when sand is used the soil should be ploughed more than once, harrowed many times, and the new ingredient evenly mixed. And where sand or clay, as one or the other may be required, can not be obtained within a reasonable distance, swamp mud, long out and well warmed in the sun, and washed with rains, will go far towards producing the same amendments—will really produce, only less permanently, both the effect of clay on sand, and of sand on clay, rendering a compact soil lighter, and a light soil more compact. The difference is, that this application would need to be repeated every few years, whereas the amendment of a soil by applying its opposite, is a permanent amendment.

The above is all on the supposition that the subsoil is porous, such that water passes downward freely, neither floods the surface, nor stops and becomes stagnant one, two, nor even three feet below. If there is any doubt about this, dig holes, like post holes, one, two, three, and three and-a-half feet deep, and if water stands more than a very few minutes in them after even the hardest shower, that ground requires draining, in order to be fit for a garden. You then have to preface your other amendments, whatever may be required, by underdraining. Of course, you would not have an open drain in your garden or anywhere near your house. A tidy farmer will hardly have them anywhere. Go to work then, and lay down the under-drains. For a garden where you expect to do a good deal of work, and would deem it bad economy to render your labor less satisfactory by any defect in the soil, the drains should be near each other. In some cases one very deep drain running through the center, and side drains falling in from opposite directions, not quite as deep, and near to each other, would be advisable. But we all know that "water runs down hill," and the owner can decide where to lay his drains better than somebody a thousand miles off.

We will only add, that the autumn is the best time to prepare the ground for a garden. Winter even need not be lost, in case of large amounts of heavy earth to be drawn from a distance. How we wish that one million of farms in our land, now showing only a little, stingy, miserable apology for a garden, not the most beautiful nor always the most productive spots on these farms, could show next spring, as the snow leaves them, grounds already prepared for gardens beautiful enough and fruitful enough to tempt the angels to come down and walk in them in the cool of the morning and evening.

Reader, we are not talking about the garden. It is only about preparing the ground. Do this, and next spring you can set your trees, begin your flower-beds, plant your seeds, and all that you do will prosper. We will tell you how to proceed as best we can. Have a good garden, you who have land. We have none—are doomed to look on brick and mortar and down on pebble stones. But you, who have land, should have a proud garden You may be proud of it. If it is a sin to be proud of a good garden—we don't believe it is—we'll act the priest and give you absolution. Have a garden that any one could be proud of, and not sin, and if the angels do not visit you there, your wives and daughters and their female friends will, and with a little aid of the imagination, you can think the angels were helping you. Prepare the plot before winter.

## Fruit Garden and Orchard.

Hardy trees should be reviewed in autumn. Manure unthrifty trees. Top-dress straw-berry beds late in the month. Bank up trees to prevent the attack of mice. Lay down and protect tender grapes.—Grape layers may be removed from the vine.—Grafts may be cut and preserved.—*Working Farmer.*

FOR THE AMERICAN FARMERS' MAGAZINE.

## Cabbage.

We have been astonished at the growth of this vegetable. We have recently seen a field of two acres or more covered with the drum-head cabbage, (so called) their leaves extending so as to interfere with each other, some of the larger plants weighing between thirty and forty pounds, and very few of them less than twenty pounds. Supposing the plants to number 3000, and their average weight to be 25 lbs., this would give 85,000 lbs., or forty-two and a half tons to the acre. Is there any other vegetable that will produce so large a crop?

This crop was produced on land of ordinary quality, simply by applying one shovelful of a compost to each hill of cabbage, made of equal quantities of barn and sea manure and night-soil, thoroughly mingled. This crop is grown with as little labor as any other, and requires no special skill in planting or growing. Great quantities of these cabbage are used by the Germans and the Irish, and it is found one of the cheapest and most palatable articles of their food.

We know of no man who has been more successful in the growth of cabbage than Mr. S. A. Merrill, of Salem, Mass., on the farm of the late E. H. Derby.

Sept. 12, 1857.

## Kitchen Garden.

Thin out turnips by pulling the larger ones for market, leaving the smaller to increase in size. Prepare for gathering fall crops; gather such as the weather may demand. Continue to weed spinage, etc. Earth up celery on dry days, after the dew has dried off. Prepare frames for parsely, lettuce, cabbage, cauliflower, and such other plants as were sown last month. Put away vegetables by the latter part of the month for protection, and sales during winter. Potatoes should be cellared or put in pits or piles, so as to secure them from wet and frosts.

In taking up roots and storing them, begin with the most tender, and take advantage of dry weather while you have it.

Expose pumpkins and winter squashes to the sun and wind, placing them on a dry board before storing them. Pack beets in sand in cellar, or put them in pits. Horse-radish may now be dug for use as wanted, leaving the old stools for future production.

Weeding at this time should not be considered as useless, and indeed the removal of parasites cannot receive too much attention in late fall. Mulching soils intended for early gardening, will add materially to their profitable culture and earlier products.

## To Destroy Weeds.

Those who have visited the Nursery of Wm. Reid, at Elizabeth, New-Jersey, have seen 20 acres free from weeds. We once heard the question asked of Mr. Reid, how he managed to have his weeds so thoroughly pulled? He replied that "they were never pulled, but that the cultivator and other tools were run between the trees and crops so frequently, that the weeds were disturbed and destroyed before they became large enough to pull." The only question in our mind was, "Will so many disturbances of the soil as would be necessary to destroy all weeds be paid for by increased crops?" Our experience since has proved, that row crops of all kinds pay a better profit when the soil is so frequently disturbed as to destroy all weeds, than with a less number of disturbances, and this, too, on soil naturally as full of weeds as any other we ever have seen. It must be admitted, however, that hand hoes are not the proper implements with which to disturb row crops, or to destroy weeds among such crops, with the single exception perhaps of a few weeds between plants in the rows, but never between the rows.— *Working Far.*

Only, among potatoes, the earth should not be thrown around the hills but once, and we would recommend great caution about disturbing the roots of corn, after the plants have attained a height of two or three feet.—Ed.

## High Farming.

Mr. F. Mechi, whose name is associated with the first triumphs of American reaping machines in England, which occurred on his farm at Tiptree, has recently written a little work called "How to Farm Profitably," in which he disposes, in a good humored manner, of all those who have taken grounds against *high farming.* He says:

"I have often been much amused by the compassionate look and manner in which my friends inquired after my doings at Tiptree. The translation of these sentiments is this: 'Mr. Mechi, you are kindly losing money by your experiments to oblige the country, and we ought to feel grateful to you.' But I sternly ejaculate that what does not pay in agriculture is not an improvement. The fact is, for several years I have been deriving a most gratifying return for my expenditure, and it is of a very enduring and continuous character; but the world does not believe it."

## Hygienic Influence of Trees.

The cultivation of forest trees is becoming more and more a subject of serious consideration among public economists.

The relation of trees to the comforts and conveniences of life, and the great question of a future supply, which arises in view of the continual destruction of our forests has attracted the attention of the best intellects of our country

To the physician the subject has an additional importance in view of the hygienic influence of trees upon the atmosphere, and consequently upon the human system, both in health and disease.

It is well known that new diseases make their appearance as the forests are cleared away, and the superior physical power and health of backwoodsmen over the inhabitants of treeless plains, has always been acknowledged.

The influence of animal and vegetable life, one upon the other, has not escaped the attention of observing men; but little or no effort has been made to inform the public of many facts in connection with this subject which it is vitally important should be known; and a wholesale destruction of our forest trees has gone on to an extent that threatens to leave us, at a time not far in the future, comparatively destitute of the great pride of America—its forests.

The physiological influence of trees of all sorts is apparent to every one who knows the avidity with which they absorb carbon and ammonia, the two great extractions of animal life, which, if left free in the atmosphere, render poisonous the air we breathe.

The planting of trees in our cities, and the preservation of forests, would do more to preserve the public health than many other more expensive hygienic measures.—*N. H. Jour. Med.*

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## The Fruitery.

Those who have them of a few years' growth, will now be realizing a very pleasant advantage over their less provident neighbors; but not without still constant and faithful care. Insects are to be observed and destroyed; blight to be prevented; every useless leaf and twig to be carefully removed. Whatever does not add directly to the health and productiveness of the tree or bush, is to be avoided; whatever does, to be appropriated.

The mildew, which is the greatest foe to the Gooseberry, may be prevented by removing the earth from directly around the roots, and mulching with salted hay, or any light compost well saturated with salt. Indeed, this system of mulching can not be too highly recommended for fruits generally. It should cover the ground four or five inches in depth, and extend as far out as the hight of the bush or tree; thus protecting the roots from the effects of intense heat and sudden changes of temperature.

If the *quality* of your fruit is a more desirable object than the *quantity*, a larger size and better flavor may be secured by thinning out from one-third to one-half, as soon as it is fairly set; or, perhaps, better still, by pinching off the blossoms.— *Wisconsin Farmer.*

# MECHANICS' GUIDE.

## Recent American Inventions.

### Sewing Machines.

A GENERAL interest appears to be awakened upon the subject of these domestic labor-saving machines, which extends to all classes of the community. In our recent tour to the East, we visited scarcely a single family who did not make some inquiry in reference to them. Every sewing girl regards her fortune as secure if she can possess one. Housewives look upon them as a godsend, that will save them a large portion of the time now devoted to the preparation of clothes for the family. And among even the extra fashionable, there seems a quiet current in actual motion, freighted with sewing machines for their special use. Our Fifth Avenue could make quite a parade of these implements. But there is, for obvious reasons, a universal fear of being cheated in the purchase. The wrong machine, or a machine badly constructed, or not in complete preparation for use, may be chosen, from the entire want of experience and of all knowledge in regard to them. Hence the anxiety of those who, in scores, have inquired of us, "what is the best?"

To answer this question is about as difficult as to tell which is the best apple in the market, or the best pear, or the handsomest dress pattern. But there are certain things that we can state in reference to them, which will be a useful guide, to some extent, for all those who would procure this curious and useful mechanism.

The world is indebted to the mechanical genius of this country for all the sewing machines in actual use in every country under the sun. The patent of Mr. Howe, for the "shuttle movement," which was obtained in 1846, is the beginning of the history of sewing machines for general use, and although he was not able to perfect his machinery so as to make a good machine, these who were competent to this, or rather who were successful in doing this, were obliged to use his "shuttle movement," because his patent covers all the known contrivances for using two threads, and all the recent inventors are obliged to pay him a handsome tribute for the use of that movement. This, of course, secures to him an immense income from sewing machines, though he never made one that the public would buy. Leaving the construction of the various parts of these machines, we proceed to make such suggestions as are of interest to one who would purchase.

Each kind of machine makes a peculiar stitch, and is confined to that, with the exception mentioned hereafter. The length of the stitch can be varied in all.

The machines familiar to us make one of the three following stitches: The tambour or chain stitch, the lock stitch, or (as in Grover and Baker's) a stitch with a compound or double looping.

The tambour stitch is that in common use in manufactories of broadcloth, etc., for marking their goods. It is formed by driving the needle through the cloth, (the eye of the needle being near the point,) then withdrawing it, but

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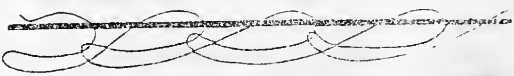
leaving a loop "slack," or not drawn out. The needle is again driven through the cloth, in the place of the second stitch, and a second loop left as before. The first loop is then hitched on to the second, which second loop secures the

first as soon as the second is itself hitched on to the third, as already described, and so the process goes on. Each loop is fastened by the next to the end of the work. Hence if this end of the thread is not properly secured, a slight force applied to it will draw out the whole seam. But it can not be thus ripped from the end at which the work was commenced. This is essentially the same stitch that is formed in plain knitting.

Another stitch is the lock or shuttle stitch, patented by Mr. Howe. This stitch is made by nearly all the machines which use two threads, the second thread being wound on a "shuttle" or its equivalent, on the under side of the work.

This is formed by locking one thread in another, as a man would hook his two fore fingers together. The second diagram exhibits this loop. This is sometimes called the mail bag stitch. The needle is thrust through the cloth, and then withdrawn, leaving a slack loop, when a shuttle or some other similar contrivance draws a thread through this loop. The next descent of the needle draws this loop tight, while the shuttle thread prevents the first or needle thread from escaping through the cloth. This action is constantly repeated. The lower thread may be nearly or quite straight, as it always is when *hard* cloth as linen is sewed. It then operates like a wire, running through every loop, or like the chain of the mail-bag, and thus holds the work firm. If, in using this stitch, the lower thread is quite straight, and the work drawn too tight, or gathered, whenever force is applied, as in washing, ironing, etc., to pull the cloth straight, the thread is liable to break. But few stitches, however, would be "let down" by this, the tightness of the work securing the thread in its place. If the under thread is drawn nearly or quite into the center of the cloth, as it would be in thick goods, if both threads are equally tight, the elasticity of the cloth will secure the thread from breaking, and the work will be much more durable.

A third stitch is made only by Grover & Baker's machine, and is formed as follows: The needle is thrust through the cloth and withdrawn, leaving a loop as in those before described, which loop is kept in its place by a rotary hook



till a second loop is formed. The first loop is then passed between the threads of the second loop, and hitched over the third loop, and the whole is drawn tight. The second loop, passing between the threads of the third, is hitched over the fourth, and so on.

The complication of the stitch made by Grover & Baker's machines, in other words, the double looping of each stitch, produces on the under side of the work a small ridge, which is a blemish to its appearance where both sides are exposed to view, as in shirt collars, wristbands, etc. Hence they manufacture another kind of machine, to be used for such purposes, which makes the same stitch as the other high-priced machines, though with different machinery.

The machine referred to as forming different stitches, is Robinson's, or rather "Robinson's with Roper's improvement." This uses only a needle-full of thread, the whole length of which passes through the eye of the needle at every stitch, the eye being a kind of hook, and the needle re-seizing the thread at every movement. Hence, if there is any imperfection in the thread, it will be discovered at once; its rupture is almost certain. This machine takes any stitch in use, we believe, except the "button hole" stitch. A friend informs us that Mr. Harrison, of this city, has a machine designed for sewing button holes, but we have never seen it.

The machines of Wheeler & Wilson, and Singer & Co., make the lock stitch, as shown in the second diagram. All the "cheap sewing machines" we have examined, as Pratt's, Watson's, Avery's, etc., make the tambour stitch, as shown in the first diagram.

So far as any advantages are to be found in one or the other of these, we are aware of none except what results from the difference of the stitch, and also the ease with which the different machines are kept in motion. One form of machine may be thought more neat and tasteful than another, and one or the other be more easily managed by particular individuals, its mysteries being more readily understood, but hosts of certificates might be obtained by each, testifying that each one is far better than all the rest, The chief point of difference between the several machines may therefore be stated as follows:

Grover & Baker's double-locked stitch is peculiar to their machines. Their shuttle machine, Wheeler & Wilson's, and Singer & Co.'s, all make the same stitch, but by different machinery, and into these mechanical differences we can not now enter. They do not very materially affect the comparative value of either. Robinson's makes its various kinds of stitches, but it has complicated machinery, does less work in a given time, and requires more effort to work it. It requires also the very best of thread. The cheap machines make the tambour stitch only, as in first diagram, and will not do so much work as the more expensive machines. There are other machines, too numerous to mention, both using the shuttle and a single thread, the special merits of which have not been brought to our notice. Some are "high priced;" some are "cheap," and one or two, like Woodruff's, are more costly than those named as cheap, and cheaper than those called high priced.

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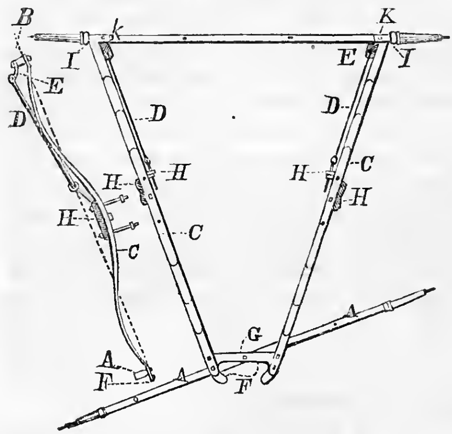
## Telegraphs for Railroads.

A NEW system of telegraph for railroads has been devised by Mr. L. Solomons, of Savannah, Ga., which seems to us very promising. The subject is one of very great importance, and all suggestions in relation to it should receive due consideration. If a plan proposed is a bad one, it may suggest a good one. Mr. Solomon uses signals, consisting of lanterns placed at intervals of five or ten miles along the whole line of the road. The sides of the lanterns next to the road are closed so as to exclude the light. Revolving shades, governed by an electrical current, alternately shut off the light of the lamps, or expose it so as to throw its rays up or down the road. A single wire connects these revolving shades in a series of telegraphic circuits, which are completed only when an additional wheel, attached to a locomotive for the purpose, passes over a lever which is fixed with necessary insulation on the track near each signal-lamp. As soon as this wheel presses on the lever, its further arm is thrown up, and the point of contact completes a telegraphic circuit of five or ten miles, and thus makes a magnet of a coil of wire, which changes the position of the revolving shades, and exposes the light of the lamp five or ten miles ahead, warning engineers on trains moving in counter directions that they must go forward cautiously, if at all. When the train reaches the next signal lamp, the wheel again depresses a second lever, which by a like operation closes the shade at the starting point or depot, opens that at the second signal lamp, and that also at the lamp five or ten miles in advance. The lights thus opened disclose the fact to one engineer that another train is within the section over which the light is shed, while the absence of the light notifies him that the track is clear. During the day the same effect is produced upon the shades, and the same warning given, which engineers may as plainly learn from the position of the shades as they could from the light of the lamps at night. The shades stand upright when the track is clear, and lie horizontally when there is a train on the section to be passed.

## Nutting's Carriage Gear.

We here present our readers with a description and engraving of an improvement in carriage gear, by Mr. Rufus Nutting, of Randolph, Vt., for which a patent was obtained in July last. The improvement consists in so constructing and applying the springs that a variety of pressure upon them shall not vary their length, so as to put the wheels out of "track," if the pressure happens to be greater upon one spring than the other; also in so combining springs and guard rods or straps for carriages with the body and axles, that they will answer the five-fold purpose of springs, reaches, perch, braces, and rocker, thereby greatly diminishing the weight and cost of carriages, while they are not only not injured in any respect, but greatly improved.




A is the forward axle, raised in the central part for increased stiffness, and also that the downward curvature near the end of the springs, C, may not hit it while turning the carriage. The hind end of the springs are T shaped and firmly held to the upper side of the axle, B, by the clasp, I, and the bolt, K, which also holds to the under side the curved bar or plate, E, which projects forward and downward about four inches, or to a certain point which is always at the same distance from the ear, H', however much the axle, B, is made to roll by the depression of the springs, and into which is linked the guard, D, attached to the ear, H', which is a part of the chafing iron, H. The object of the guard, D, is to prevent any extension of the spring when the wheel suddenly strikes any obstruction, and also to support the body in case the spring should break.

The springs, C, are curved downward near each end just so much that in depressing them those parts below a straight line, from one end to the other, increase just as much as that part above decreases, and *vice versa*, and being firmly fastened near to the outer ends of the hind axle, converge to the king-plate or fifth wheel, F, to which they are bolted, and through which the king-bolt, G, passes loosely, and screws into the under side of the forward axle, which is rounded a little upon its upper side, that the springs may play freely, the thills being *firmly* attached to it, instead of being connected by *joints* or *hinges*, as is sometimes the case. The body is attached to the springs by spring-bars, as usual.

The advantages of this invention consist chiefly in simplicity of construction, as by it 2 reaches, 1 perch, 1 rocker, 6 iron plates or braces, 18 bolts, and 4 hinges or joints, usually used, are wholly dispensed with, thus lessening cost and weight; in admitting of longer and consequently more elastic springs without increasing the length of the carriage; in shorter turning; in allowing the hind axle to be much smaller and lighter; in admitting of having the four wheels of equal size, which renders the jolting much less and the draft easier; in stillness in running, it being impossible for the king-bolt to work loose or rattle, and the guards being always *tense*, so that they can make no noise; in lightness of appearance, etc., etc.

The chief features of this improvement have been thoroughly tested in one one-horse and one two-horse carriage for more than a year, and it proves entirely satisfactory.

## American Institute.

The twenty-ninth Annual Fair of this honorable and useful institution was opened to the public, as has been announced. We have been able to make but a very partial examination of the numerous machines and useful inventions there collected, nor have we space fully to describe the few we have examined. Besides, many pieces of machinery are not yet in operation. Hence we can make but a beginning in this direction. The show will prove a good one, and will pay well for the time given to it. For the better appreciation of the extent and value of the exhibition, in some of the more important branches, we shall take them up in classes. But convenience requires us now to refer to several of a miscellaneous character without much order or arrangement.

### SPRING STAIRS.

Mr. Charles Robinson of Cambridgeport, Mass., exhibits his Patent Elastic Spring Stairs. This invention was patented in May last, and consists of a steel spring in connection with an India rubber supporter, which are placed upon a cross slat under the stair, upon which the stair rests. At each tread of the foot the spring yields, and in its expanding or upward movement, it diminishes the effort required for rising to the next stair. The yielding of the spring is also a relief as the foot rests upon a stair, either in ascending or descending, preventing all the jarring which sensitive nerves or weak or tired persons sometimes feel even in descending a steep hill. The whole cost of a stair thus connected, is within a dollar and a half.

### WINDOW SASH DETACHMENT.

Mr. John Casey, whose Depot is announced as 345 Broadway, exhibits a new and very much improved method of attaching the cords and pullies to a window sash, and of removing the sash from its casings. The invention was patented June 1856, and is very simple, consisting only of a large spherical knot at the end of the cord, let into a corresponding nitch made for it in the edge of the sash. Hence there is no untying or cutting of cords, when the window is to be removed. The sash is taken out from its position in its frame without drawin a nail or turning a screw.

### WINDOW BLIND OPERATOR.

McMaken's Blind Operator is designed to open and shut an outside blind, without opening the window. This is done by jointed levers, running through the lower side of the frame, fastened to the blind, and secured in its place on the inside of the window by a small brass plate. The change is effected very easily; the blind is moved to and kept at any desired position, and does not interfere with shutters. Several architects have given it their commendation.

### ORNAMENTAL FLOORING.

Messrs. Groebl & Volkmar, of Baltimore, Md., exhibit some very handsome specimens of "improved marquetry," which they claim to be an improvement upon all hitherto in use. It consists of Mosaics of various patterns, and is suitable for private or public buildings. It is very highly ornamental. Its cost is $1.5 or $1.25 per square foot, more or less, according to its figure, etc.

### VENTILATING CHAIR.

We saw at the Mechanic Fair, in Lowell, a chair, the rocking of which kept in motion a large fan, just over head. But a much more luxurious arrangement is on exhibition at the Crystal Palace. Between the back ends of the rockers of a well-stuffed chair, are arranged compound bellows, placed upon the floor; a pipe leads from these bellows into an ice-box under the seat, where the draft is cooled. Another pipe leads from the ice-box up the side of the chair to a convenient height, which then turns towards its occupant, who receives the draft upon his person. In its passage the draft passes through a box provided with any desired scent, so that this artificial current breathes of roses, or spices, and will carry any medical influence which is placed within its course, to the lungs of an invalid. The whole arrangement costs from $18 to $20 and upwards, according to its style. It is exhibited by Mr. David Kahnweiler, of Wilmington, N. C.

### PORTABLE PRINTING PRESS.

A very simple little affair, which one wonders never was thought of before, is Lowe's Patent Portable Printing Press, which does its work very neatly. The smallest size prints a sheet 5 by 6 inches, and costs but $5, and the largest 13 by 17 inches. This costs $15. It may also be conveniently used as a letter copying press. It is exhibited by the Lowe Press Company, Boston.

IRON FURNITURE.

Very elegant furniture is now manufactured, exclusively of iron. Many articles are on exhibition at the Crystal Palace. Among the most beautiful are Patent Spring Chairs from the ware-room 292 Broadway. These are even luxurious, so perfectly are they arranged. But whenever iron comes even in indirect contact with the person, it is found to be uncomfortable in winter. These chairs are designed to be proof against this. How successfully this is carried out we can not judge.

WRIGHT'S BED BOTTOM.

This old friend of ours again makes its appearance. Continued use of it confirms our conviction that it is at least as good as the best. It has also the advantage of being easily kept clean, every part being perfectly accessible both to the brush and the scouring cloth. It is for sale 640 Broadway.

We have memorandums of other articles equally worthy of special mention, but our pages are full, and we must defer the mention of them to our next number.

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## Mechanics Fair, Lowell, Mass.

The second exhibition of the Middlesex County Mechanic Association is now in progress. We had the pleasure of being present at its opening, and of examining its numerous apartments.

Lowell is the center of a vast array of mechanical talent. The mantle of its founders, the Lowells and the Moodys, now rests on not a few whose inventive skill, and whose executive energy have wrought and are still working out an amount of good through the world, the origin of which the world is ignorant of, and which it constantly uses as a means of wealth and of power, while the inventors are seldom thought of, and their very names may not endure longer than will their tombstones.

The anxiety and paralysis which have seized whole communities of business men, in almost every section of our country, have not failed to make a deep mark upon the industry of that city. One "corporation" after another has stopped its machinery and dismissed its operatives—the same process that is going on at Lewiston, Newburyport, in Rhode Island, and indeed in almost all manufacturing districts. This turn of affairs has no doubt operated unfavorably upon the Fair. Mechanics and inventors had less than their usual ardor of ambition, and less hope of present advantage from the exhibition of their ingenious products. In several departments the show is therefore less extensive than we noticed in their first exhibition some two or three years ago.

Nevertheless, enough is there collected to show the high attainments and consummate practical skill, which characterize the people of that city and county, while strangers residing at a distance make some very valuable contributions to the show.

Of cotton, woolen, and silk goods, white and colored, there is a very extensive and very elegant assortment from the Merrimac and Hamilton corporations of Lowell, the Lowell Bleachery and Dye Works, from the Lawrence Mills, and the Lewiston Mills. Most of these are from the well known house of Lawrence & Stone, the agents of these and other manufacturing establishments, whose reputation is world-wide and not excelled by that of any house in Christendom, while it is equalled by few.

In the home-made department we saw much to admire and some to censure. A quilt composed of some six or seven thousand pieces, sewed together by a girl of thirteen years of age, proves, by "six or seven thousand" witnesses, that "all the fools are not dead yet," and that some mothers have very debased and debasing views of the elements of true education, and of the essence of good domestic training. Each of those little polygons, scarcely larger than a dime, in emphatic tones, proclaims time wasted, energies prostituted, temper tried, and labor worse than thrown away. Let it be regarded as a warning to parents who are responsible for the proper development and training of the mind and affections, and for the due growth and strengthening of each and every part of the physical being.

In the same apartment is a new gas light by Mr. Mace, of Springfield, Mass., which promises well. A passing view of it will not warrant us, however, in any wholesale commendation. We can only say it looks well and seems quite worthy of attention. The same idea is also applied by Mr. Mace to a portable gas lamp.

All the varieties of fancy work, in silk, linen, etc., silver wares, hair work, musical instruments, etc., etc., are here collected, and furnish opportunities for those fond of examining these departments of art.

MECHANICAL INVENTIONS.

This department is limited in extent, but excellent in its details. Some few of them demand a more extended notice than we can now give. Among these is the Improved Turbine, which is used very generally in the Lowell mills, and is of far greater value than the public generally seem to suppose. Some other matters should be described, did our space permit. We can give room, however, only to the following:

SOAP-STONE WORK.

We often see "marbles" of various sorts, and composed in fact, of all sorts of things, wrought into articles of furniture and utensils of various kinds. But we do not remember to have seen soap-stone wrought into so useful and tasteful forms as in the exhibition of Wm. H. Maine & Co., of Boston. A medal was awarded them at the Exhibition of the Massachusetts Mechanic Association, of 1856. Sinks, buckets, etc., etc., are "finished, complete in every part," in the language of the judges. We commend them to public attention.

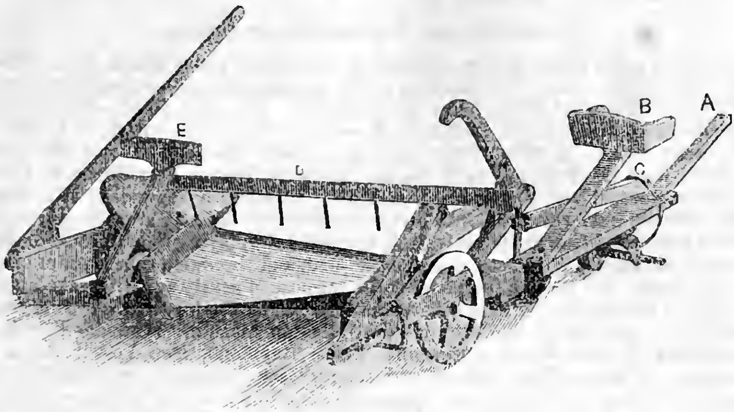
## The Newburyport, Mass., Fisheries.

THERE are employed in the mackerel fishery of this city, fifty sail of vessels, with a total tonnage of 3,827 tons, valued at one hundred and twenty-five thousand dollars; the outfits for the same are upwards of thirty thousand dollars; the number of barrels used exceeds fifteen thousand; number of hogsheads of salt, twenty-five hundred; bait, two thousand barrels. This fleet employs six hundred men, to whom are disbursed some fifty thousand dollars.

The Labrador fleet, engaged in cod fishing, comprises ten vessels; aggregate tonnage, 1,200 tons, valued at twenty thousand dollars; outfits for the same, fifteen thousand dollars; number of hogsheads of salt used, two thousand; number of hands employed, 180; amount of disbursements, about fourteen thousand dollars. The population of the city is about 10,000.

## Manny's New Mower and Reaper.

The following engraving represents a new Mower and Reaper, invented by that hero in the conception and construction of agricultural machines, Pells Manny, of Freeport, Ill. We have not room now for a protracted description,




but will give it hereafter. There is a Reel, not shown in the engraving, the place of which will be obvious to those familiar with this implement.

## Recent Patents,

[Issued from the U. S. Patent Office, from August 28 to September 8, 1857.]

### Agricultural.

Raking apparatus for harvesters, Israel Dodenhoff, Bloomington, Ill.—Hay and manure forks, Wm. Jones, Speedsville, N. Y.—Harvester, Pells Manny, Waddam's Grove, Ill. A new mode of constructing the fingers of the cutting apparatus and of securing them on the finger bar.—Fence for poultry yards, Wm. P. Thomas, Whitewater, Ind.—Rake for harvesters, J. W. Brokaw, assignor to Warder Brokaw and Child, Springfield, O.—Cultivator, C. H. Sayre, Utica, N. Y., assignor to himself and Samuel Remington, Ilion, N. Y. A combined horse hoe and double mould board plow.—Cutting corn stubble, John Ausparger, Trenton, O. A combination of teeth of a rake and rotating knives. —Rake, Andrew J. Blodgett, Newport, N. H.—Seeding machine, Charles W. Caohon. Brooklyn, N. Y.—Straw Cutter, Aury G. Coes, Worcester, Mass. So constructed that its bed and knife shall each operate with a compound motion produced by a lever, crank, fulcrum rod and guides.—Operating the cutters of Harvesters, James Haviland, Milton, N. Y. By means of a spirally grooved intermediate shaft, and a series of hemispherical or oval-headed teeth projecting from the face of the main bearing wheel.—Raking device for harvesters, Stephen R. Hunter, Cortland, N. Y.—Cotton seed Planter, Thomas J. Rogers, Cassville, Ga.—Attaching scythes to snaths, Oliver Clark, Henrietta, O.—Seed Planter, Cyrus C. Aldrich, Fairbault, Min. Ter.—Corn Planter, D. R. Alden, Unionville, O.—Same, H. R. Allen, Athens, O.—Corn Sheller, Andrew Dillman, Plainfield, Ill.—Seed Planter, J. W. Ells and James Charlton, Pittsburgh, Pa.—Mowing Machine, G. C. Dolph, West Andover, O.—Hand Seed Planter, Joel Haines, West Middlebury, O.—Straw Cutter, Porter Hill and C. E. Jones, Millport, N. Y. A combination of the rotating knife, or cutting disk, and a series of revolving chambers, arranged round a central shaft, in such manner that its revolutions shall bring the straw in each, successively, between the edge of the knife and the periphery of the chambers. There is also a new method of feeding the straw to the knife.—Corn Planter, D. W. Hughes, New-London, Mo.—Sheep-shearing Machine, J. V. Jenkins, Jackson, Mich.—Scythe Snath, Abner H. Pinney, Columbus, O.—Churn, Daniel E. True, Lake Village, N. H.—Harvester, C. M. Lufkin, Ackworth, N. H., assignor to Norris Lufkin, Unity, N. H.—Cultivator Teeth, Edmund L. Freeman, Brownville, N. Y., assignor to himself and J. and G. Lord & Co., Watertown, N. Y.

### Metallurgy and Manufacture of Metals.

Dressing saws, Philo Maltby, Dayton, O.—Bending metal plates, E. L. Gaylord, Terrysville, Conn. For bending metals at right angles.—Same, Julius Perry, Plymouth Hollow, Conn. For accomplishing the same point.—Metal buttons, Jared O. M. Ingersoll, Ithaca, N. Y.—Shears for cutting metal, T. F. Taft, Worcester, Mass. A rolling lever, upon an inclined plane, which is on the side or blade holder.—Twisting curb chains, Lauriston Towne, Providence, R. I.—Separating ore, Thos. J. Chubb, New-York. Effecting a separation of a thin layer of finely pulverized ore, into layers or strata of different specific gravity, upon a perforated bed, or its equivalent, by means of applying light, minute puffs of air up through the interstices of the said bed, and through a thin layer of ore, evenly spread, and resting thereon, for the purpose of gently agitating said layer of ore and floating the lightest substances therein to the top, and allowing the heaviest to gravitate to the bottom.—Pin sticking machine, Thaddeus Fowler, Waterbury, Conn.—Bending machine, Lewis Raymond, New-York. An arrangement of three rollers, convex and concave, for bending sheet metal transversely and longitudinally by one operation.—Setting saw teeth, Pearson Crosby, Fredonia, N. Y.—Vibrating shears, John Toulmin, New-Worcester, Mass. Hanging the movable blade of a pair of shears by two adjustible center pivots upon an adjustible pillar block.—Ore Separator, Thos. J. Chubb, New-York, an addition to the patent above described, perfecting the operation of the device there secured —Swedging hatchet heads, Levi Dodge, Cohoes, N. Y.—Planing saw teeth, John N. Wilkins, Waukegan, Ill. Two planers and cutters for shaping the edges of saw teeth.—Forging metals, Elbridge Wheeler, Feltonville, Mass.—Pipe coupling, E. Wright, Boston, Mass. A compressible packing ring, inserted in a groove round a pipe on each side of the joint in combination with screw threaded or flanged and bolted couplings, and a thimble for holding the packing rings in the grooves, so as to form a water light joint and resist separation.—Head Rest, Wm. M. McCauley, assignor to J. N. McIntire, Washington, D. C.—Casting bearings on water wheels, Chas. Taylor, Little Falls, N. Y.—Socket coupling for lathes, G. N. Trowbridge, Lowell, Mass.—Cutting figures out of sheet metal, C. P. S. Betts, New-York.—Improved wrench, H. M. Clark, New Britain, Conn.—Bolt for safes, Stuart Perry, Newport, N. Y. Combining a safety bolt with the lock of a bank, vault, etc., by means of a bar or trigger, so that the forcing of the lock by any means, from the door, shall trip or release the safety bolt and allow it to securely fasten or lock said door.—Lock, John P. Sherwood, Fort Edward, N. Y.—Door Spring, Edward P. Torrey and Wm. B. Tilton, New-York.—Padlock, Linus Yale, Newport, N. Y.—Sash Lock, William Patton, Towander, Pa.—Machine for forging nuts, Edward Pay and Samuel Hall, New-York.

### Manufacture of Fibrous and Textile Substances.

Hoops for ladies' skirts, Charles S. Goodman, Washington, D. C.—Self-acting mules for spinning, George Wright, Grafton, Mass.—Wetting and cutting paper, Moses S. Beach, Brooklyn, N. Y.—Manufacturing hat bodies, Joseph Booth, Newark, N. J. A rotary flat hurdle, having its perforated surface divided, in combination with a picking or bowing apparatus, and air exhausting apparatus, also an arrangement of the fan-shaft upon the spindle of the revolving hurdle.—Umbrellas and Parasols, Sheldon Confield, Derby, Conn., the form and construction of the clasp.—Loom, Edwin A. Scholfield, Westerly, R. I. A driving or revolving cam or tappett wheel, which acts to spring the harness, or produce a shed in weaving, by an intermittent or variable motion, by the use of star gears. —Sewing Machine, Wm. Wickersham, Boston, which we shall notice hereafter.

—Same, Henry Behn, assignor to himself and Thos. Sewall, New-York. A method of looping by two pointed bars, one moving in a plane above the other, and so operating in combination with the needle, that the loop is formed and held open by bending the thread in opposite directions.—Same, Samuel Larkin, assignor to Wheeler & Wilson Manufacturing Co., Bridgeport, Ct. A spring brake.—Folding Paper, C. P. Wiggins, A. H. Nordyke, and Benj. Strawbridge, Richmond, Ind.—Spooling thread, Charles H. Bradford, Lynn, Mass. Sack fastener, Wm. P. and Jacob E. B. Maxson, Albion, Wis. A spring tongue, pressing the string against a side flange or projection.—Sewing Machine, Orson C. Phelps, Rochester, N. Y. Constructing the needle bar with a cap or helmet on its top, and a spring or elastic material interposed between the parts, for the purpose of giving a yielding bearing to the thread bolt, whereby a very fine thread may be used without breaking.—Carding Engines, H. N. Gambrill and S. F. Burgee, Woodbury, Ind. Delivering the cotton into the main cylinder always at two and sometimes at three different places, while using but one set of feeding rollers, etc.—Wash mixtures for woolens, etc., Wm. Reisig, Astoria, N. Y. A cheap aqueous solution, with alkali in excess.—Condenser for list speeders, Wm. Mattison, assignor to J. C. Whitin, Northbridge, Mass.

### Chemical Processes, Manufactures, etc.

Telegraph Repeaters, J. E. Smith, Troy, N. Y.—Filter, Wm. W. Ayres, Worcester, Mass.—Glass Furnace, Samuel Richards, Philadelphia, Pa.—Spirit Still, Edward Herring, Walton-on-Thames, Eng.—Insulated telegraphic wires inclosed in metallic tubing, Samuel C. Bishop, New-York.—Manufacturing Verdigris, Ludwig Brumlen, Hoboken, N. J.—Gas Retorts, Sounders Coates, New-York. A false bottom of metal of different degrees of fusibility, as one of lead in combination with one of iron, resting upon the easily fusible metal.—Vapor Lamp, J. G. Gilbert, New-York.—Machines for punching paper fillets, for transmitting paper fillets, John P. Humaston, New-Haven, Conn.—Blast Furnace, Samuel Wilkes, Hammondville, O. The application of steam in blast furnaces at the boshes.—Saccharine Evaporators, Joseph Bour, Forbach, France, assignor to Charles Parlange, Parish of Point Cupee, La.

### Calorifics, Including Lamps, Stoves, &c.

Coal sifters, Cyrus C. Aldrich, Faribault, Min. Ter.—Signals for steam-boats, Albert Potts, Philadelphia.—Extension Gas Tubes, Charles Monson, New-Haven, Conn.—Coal Sifter, William D. Brown, Weymouth, Mass.—Chimney Cap, Ira Mahew, Albion, Mich.—Gas Regulator, John H. Powers, Newark, N. J.—Lantern, J. S. A. Rohrman, Philadelphia, Pa.—Portable Gas generators, Warren A. Simmons, Boston, Mass.—Cooking Range, Samuel Pierce, Troy, N. Y.—Cupola Furnace, Philip W. Mackenzie, Jersey City, N. J.—Water vessel for hot air furnace, Wm. Moultrie, New-York.—Gas Regulator, John H. Cooper, Philadelphia, Pa.—Grate Bars, Edward Dugdale, Burlington, N. J.—Cooking Stove, Sidney Godley, Lockport, N. Y.—Baker for Cooking Stoves, P. P. Stewart, Troy, N. Y.—Hot Air Register, J. V. Tibbetts, New-York.

### Steam and Gas Engines, &c.

Tube for steam pressure gauges, E. H. Ashcroft, Boston, Mass.—Metallic Packing for pistons of steam engines, G. H. Corliss, Providence, R. I.—Steam Pressure Regulator, Lucius F. Knowles, Warren, Mass.—Packing of Rotary Engines, Gerard Sickles, Brooklyn, N. Y.

### Navigation and Maritime Implements.

Surf and Life-Boats, Richard C. Holmes, Cape May C. H., N. J.—Life preserving berths, Eldridge Foster, Hartford, Conn.—Attaching whiffle-trees to tow lines, Andrew Seaman, Amsterdam, N. Y.—Ships' Berths, Henry Getty, Brooklyn, N. Y.—Ships' Capstans, Charles E. Marwick, Portland, Me.

### Mathematical, Philosophical, &c.

Eye Shading Apparatus, Francis H. Jones, Federalsburg, Md.

### Civil Engineering, Architecture, &c.

Machine for ramming under the cross-ties of railroads, R. B. Harrison, Vicksburg, Miss.—Wiring Blind Rods, Byron Boardman, Norwich, Conn.—Drawing the curve of circular stair railways, Geo. S. Stewart, Meadville, Pa.—Suspending Eave's troughs, James A. Watrous, Green Spring, Ohio.—Moving stores, &c. in case of fire, Asa Blood, sen., Norfolk, Va., and Robert W. Brown, Washington, D. C.—Boring Machine, Emmett Quinn, Trenton, N. J.

### Land Conveyance.

Reversible Railroad-car coupling, Joseph Boothroyd, Michigan City, Ind.—Tightening tires of carriage wheels, J. M. Dick, Buffalo, N. Y.—Automatic railroad car-brake, W. R. Jackson, Baltimore, Md.—Wear iron for carriages, I. Geo. Lefler, Philadelphia, Pa.—Thills, Philipe Baillau, New-York.—Hub for carriage wheels, Jas. W. Jackson and Luther W. Burchinal, Smithfield, Pa.—Adjusting Carriage Tops, C. W. Saladee, Columbus, O.—Railroad Car Brake, James Mitchell, Osceola, Iowa.—Railroad Rail, Edward W. Stephens, and Richard Jenkins, Covington, Ky.

### Hydraulics and Pneumatics.

Sealing Cans, Edwin Bennett, Baltimore, Md.—Locking faucets, Henry Getty, Brooklyn, N. Y.—Hermetically-sealing Cans, Wm. Borrman, Cincinnati, Ohio.

### Mechanical Powers.

Portable Horse Power, Daniel Woodbury, Rochester, N. Y.

### Mills and Mill Gearing.

Winding Mill, William Stauffer, Middlebury, Ind.—Feed and Gigging for saw mills, Geo. D. Lund, Yonkers, N. Y.—Tubular Shafting, Zacharia Allen, Providence, R. I.

### Lumber, Including Implements, &c.

Mortising chisel, John A. Scroggs, Burlington, Vt.—Manufacturing Modern Washboards, L. B. Batcheller, assignor to West, Canfield & Co., Arlington, Vt.—Sawing Staves, Peter Deal, Amsterdam, N. Y., and James Greeman, Northampton, N. Y.—Saw Clamp, Leonard O. Fairbanks, Bridgeton, Me.—Sliding Rest for lathes, E. S. Gardiner, assignor to Smith, Gould & Co., Philadelphia.—Crozing and champering staves, H. L. McNish, assignor to D. C. Butler, and H. L. McNish, Lowell, Mass.—Piercing Blind slats, John Carpenter, Stonington, Conn.—Clamping Logs in sawing machines, Stephen Woodward, New-London, N. H.—Rotary Plaining cutters, H. H. Baker, Newmarket, N. J.

### Stone, Clay, Glass, &c.

Brick Machine, Stephen Ustic, Philadelphia, Pa.—Same, P. S. Devlan, Reading, Pa.

### Leather, Tanning, &c.

Machine for lasting boots and shoes, John Kemball, Boston, Mass.—Pegging boots and shoes, Seth D. Tripp, Winchester, Mass., assignor to himself and Luther Hill, Stoneham, Mass.—Boot Crimp, William W. Wilmot, assignor to himself, Amos H. and Charles H. Brainard, Boston, Mass.—Tanning Liquid, Leo de la Peyrouse, Paris, France, assignor to Michael J. A. Guiet, New-York.

### Household Furniture, &c.

Washing Machine, Philip N. Woliston, Springfield, O.—Shower-bath apparatus, Wm. Meyer, Progress, N. J.—Smoothing-iron, Wm. F. Shaw, Boston, Mass. A new mode of constructing the iron with ascending and descending flues, so as to heat it more effectually and conveniently by gas.—Washing Machine, Hiram F. Everett, Benton, Pa.—Self-waiting table, William B. Farrar and Jonathan H. Farrar, Evans' Mills, N. C. A table with a central revolving top.—Washing Machine, Wm. M. Hammond, Jonesville, Mich.—Same, Justin Loomis, DeRuyter,

N. Y.—Same, Isaac A. Sargent, Springfield, Ohio.—Same, Abram Wood, Camden, N. Y.

ARTS ' POLITE, ORNAMENTAL, &c.

Photogalvanographic Printing, Paul Pretsch, Austria.—Inkstand, Thomas Rotjohn, New-York.—Watch-key Finger-ring, Elihu Bliss, Newark, N. J.

FIRE ARMS, &c.

Cartridges for breech-loading fire-arms, J. D. Greene, Cambridge, Mass.—Percussion cap primer, Geo. W. Baker, Burlington, Vt.—Projectile for rifled cannon, Theodore T. S. Laidley, U. S. Army.—Percussion Powder, Magnus Kling, Reading, Pa.

MISCELLANEOUS.

Machine for drying grain, etc., Christian Custer, Philadelphia.—Attaching wires to bell telegraphs, Henry Hochstrasser, Philadelphia, Pa.—Washing bottles, Henry N. Degraw, Watervleit, N. Y.—Animal Trap, George Hart, Granger, Ohio.—Rendering trunks water-tight, Chas. A. Hinckley, Stonington, Conn.

# Recent Foreign Inventions.

## Improved Union Gas Stove for Lighting and Heating.

BY GEO. NEALL, Northampton, Eng.

WE have already given our readers to understand that we regard this as one of the few *great points*, which, when it is fairly brought out, will be one of the grand discoveries of the age. Light and heat, by artificial means, are two of the absolute necessities, and in a sense, the highest luxuries to be offered any community. We present the following description of Mr. Neall's invention, as promising something in itself, but as of still greater value as a suggestion to be improved upon. It combines, as will be seen, the stove and the lamp, warming and lighting by the same apparatus.

Fig: 1

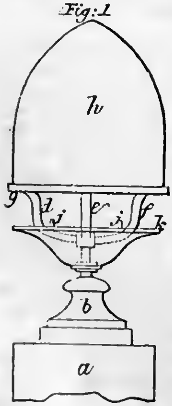
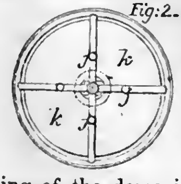


Fig. 1 represents the apparatus as resting on a pedestal. The gas is supposed to be carried up through the center of the pedestal, *a*, and through the base or stand of the stove, *b*, and through the radial arms, partly shown in dotted lines, *d*, *e*, *f*; and to these arms (which may be of any convenient number) the circular rim, *g*, *g*, is attached, around the outside of which a slight fence or rim is formed, which may be pierced or raised in any ornamental pattern or suitable design, and within this rim or fence the glass dome, *h*, rests. The burners *j*, *j*, are fixed perpendicularly to the radial arms, or they may be inclined inwardly, if desired. In some convenient place, at or near the stove, it is necessary to have a stop-cock for regulating the supply of gas; the necessity of this will be hereafter referred to. The shape of the dome may be varied, but the form herein exhibited is preferred; and must be made without any openings or apertures otherwise than at its base; and, as a rule, the dome should be ground or deadened on the outside, which will tend to soften the effect of the light, and at the same time allow of its being painted, stained, cut, or otherwise ornamented.

Fig: 2.



In lighting this union stove and lamp it is necessary, as a precaution, to turn on at first but a little gas, (which may be regulated by means of the stop-cock above referred to,) and to light all the jets as simultaneously as possible. The small quantity of gas at first lighted will have the effect of gradually and uniformly heating the dome, and that done, the gas may be further turned or increased, as required. This heating of the dome is effected by the then rarified and heated state of the air within it, which has no way of escaping but by being forced down by the continuous supply that is constantly rushing in around the burners supporting the flames, and ascending to the center of the dome, there distributing itself, and descending close to its interior surface, and escaping beneath the rim, *g, g;* thus there is a continuous stream of heated air continually pouring out underneath the rim of the dome, and diffusing itself around the apartment; and at the same time that light is emitted through the dome, heat is also thrown off from the surface of the dome by radiation.

This union stove and lamp may be constructed with or without the reflector, marked *k, k;* but when that is used, the light is thrown down and diffused around the floor of the apartment; and this reflector being roughened, ground, or deadened on its under side, may, like the dome, be painted, stained, cut, or otherwise ornamented.

The same description of gas stove or lamp may be applied to a bracket support, suitable for being placed around galleries or walls of churches, chapels, or such like buildings, where light and heat are required to be generally diffused. The gas in this instance is conducted through a tube constructed or applied to the bracket, and thence to the burners; and around the rim that supports the dome, glass drops or prisms are suspended, and merely introduced here by way of ornaments.

Fig. 2 represents a plain view of the rim, radial supports, and burners, *j, j;* the eccentric circle, *k, k*, representing the glass dish or reflector.

The union stove and lamp may also be adapted so as to be suspended from the ceiling, and may or may not be fitted with a slide and compensating or balance weights.

## Improvements in the Manufacture of Artificial Stone, etc.

By Frederick Ransome, Ipswich, Eng.

The discoveries of Hardinge in this country, and of scientific men in England, promise much for the next generation, in the economical preparation of building stone, not inferior to any natural rock, and nearly or quite as cheap as bricks now are. Mr. Ransome is doing much in this direction.

This invention, as now made known, is applicable to those descriptions of artificial stone which are compounded with sand, clay, and other mineral or earthy substances, together with soluble silica or a soluble silicate; and consists in adding thereto a substance which will fuse more readily than the sand, and will run into and fill the pores of the stone, and thus increase its density. The substances preferred for this purpose are pumice-stone, or a readily fusible glass. When pumice-stone is employed, it is prepared in the following manner: Take finely-powdered pumice-stone and mix it with a solution of soluble silica, sp. gr. (1·700,) so as to form a stiff paste capable of being moulded, and mould it into balls of about one inch in diameter, and fuse it in an ordinary crucible. When fused, grind it in to a powder and mix with it a solution of silica, so as again to form a paste. In preparing the artificial stone the ingredients are mixed with the following proportions, by measure: Siliceous sand 30 parts; finely-powdered silica, 10 parts; solution of silica, or what is called silicious cement, described in the specification of a patent granted to the present patentee, 22d October, 1844, 5 parts, sp. gr. 1·700; powdered pipe-clay, 5 parts; and pumice-stone, prepared in the way above described, 5 to 10 parts. These materials are mixed together and treated in the way described in the specification above referred to, and which is now well understood. When a readily fusible glass is employed in the manufacture of artificial stone, the glass is prepared by fusing together, in a reverberatory furnace or crucible, the following materials: Silicate of soda, 100 parts, sp. gr. 1·400; oxide of lead, 100 parts. And in preparing artificial stone, for the 5 to 10 parts of the prepared fusible glass, is substituted 5 to 10 parts of the pumice-stone in the mixture before mentioned.

This invention also consists in a method of rendering artificial or natural stone, bricks, and other materials used for building purposes, less liable to decay. For this purpose the stone or other material is coated or saturated wholly or superficially with a solution of soluble silicate, and has afterwards applied to it a solution of chloride of calcium, by which an insoluble silicate of lime is formed in the body of the stone or other material. In place of a soluble silicate and chloride of calcium, other preparations may be used; the invention consists in the application, in succession, of two solutions, which, by mutual decomposition, produce an insoluble substance, which is deposited in the structure, and on to the surface of the stone or other material. When a soluble silicate is employed, the patentee takes a solution of silicate of soda or potash (the sp. gr. of which must depend upon the texture of the stone to be operated upon, but generally about the sp. gr. of 1·400 at ordinary temperatures,) and after having removed from the stone, etc., as much extraneous matter as is convenient, the solution is applied over the surface of the stone or other material, with a brush or otherwise, until it has absorbed a sufficiency. A solution of chloride of calcium is immediately, or as soon after as convenient, applied—taking care to incorporate the two solutions as much as possible by means of a brush or otherwise. By this application the silica combines with the lime, forming silicate of lime in the pores and on the surface of the stone or other material, whilst the chloride, combining with the soda or potash, forming chloride of sodium or potassium, is readily removed by washing. When the stone or other material is of a very porous nature, the strength of the silicate solution may be increased, and one coating will be sufficient; but if, on the other hand, the stone or other material is very slightly porous, then the strength of the silicate solution should be reduced, and several coats should be laid on. Or, for some descriptions of stone, more particularly sandstones or freestones, a saturated solution of sulphate of alumina instead of the silicate of soda or potash is preferred, followed by a solution of baryta; by which means a compound precipitate of alumina and baryta is produced. Where convenient, instead of applying the solutions by means of a brush, the stone or other material may be immersed in the several solutions. When desired, the precipitates can be colored to any tint to suit the stone or other material, by means of soluble salts of chrome or iron mixed with the solutions employed.

## Improvement in Dyeing.

By Frederic Albert Gatty, Lancashire, Eng.

This invention consists in the use of nitrate of soda, sulphate of soda, chloride of sodium, sulphate of magnesia, sulphate of lime, and chloride of calcium in dyeing cotton with logwood, quercitron bark, Sapan wood, peach wood, Lima wood, and other dye woods of the same description.

In carrying out this invention, it is found that one pound of either of the above-named salts, or a mixture of two or more of them, placed in the vat with fifteen pounds of any of the above-named dye materials, produces a good result; the quantity of the salt may, however, be varied, as an excess produces no bad effect. Instead of mixing the said salts with the dye materials in the vat, as described above, they may be previously mixed with the dye materials. The process of dyeing is carried on in the ordinary manner.

## Improvement in the Manufacture of Wire Ropes.

By John Fowler, Havering, Essex, Eng.

In the manufacture of wire ropes, instead of having all the wires which are around the central core of one size or diameter as heretofore, and in place of all the wires being of iron, one of the wires in each strand is of larger size or diameter than the others, and this larger wire in each strand is made of steel; hence each strand of wire will have a spiral ridge around it, and when such strands are laid together, the projecting ridges of the strands which are outwards rest on or against any surface on which the rope is moved, and the steel projecting wires are the ones which are first worn away.

The patentee says: "I have found that about three sizes larger is a convenient size for the larger wires, though I do not confine myself thereto, as the size may be varied; and I make such larger wires by preference of steel, in order that they may wear better and longer, and preserve the others from wear."

## Patent Manure for Vines, etc.

By Anne Marie Macé, Paris.

Madam Macé is the widow of Georges Fremont, late of Rue des Collonnes, and is the patentee of what is called "Fremont's Manure." The "invention" consists in employing the ashes of wood and charcoal, or coal cinders, or other similar ashes, combined with human urine, in equal proportions by measure.

The use and purpose of such compost is similar to that of any other artificial manure. For vines, it is only requisite to apply to the foot of each stock a compound of about two pints of ashes and two pints of urine. For tilling land the quantity to be used may differ, according to the quality of the soil to be operated upon, but the mixture must be in the proportions, or about the proportions, before named. Such manure destroys a quantity of insects noxious to the products of the soil, and greatly improves the lands submitted to its action.

## Transmitting Signals by Musical Sounds.

The *France Musicale* gives an interesting account of experiments made in presence of the Emperor of the French when at Plombières, to test the efficiency of M. Sudre's plan for transmitting signals to the troops of an army or navy by means of musical sounds. During the Emperor's stay, M. Sudre, the inventor of what is called *telephonie*, or the art of transmitting signals and phrases by sound, had, with his wife, the honor of exhibiting before his Majesty. Placing himself in the middle of the saloon, he announced that he would, with his violin, express any phrase his Majesty might please to dictate to him, in such a manner as to enable Mme. Sudre, who was seated at the further end of the room, among a group of ladies, to say what it meant. The Emperor immediately wrote on a piece of paper the words: "*Le premier qui fut roi fut un soldat heureux*," and M. Sudre produced a few sounds from his violin. Mme. Sudre immediately rose and repeated the phrase word for word. Another experiment was then made—it consisted in speaking the notes instead of playing them. The Emperor wrote, "*Plombieres est une ville charmante ce soir*," and M. Sudre, after reading the phrase, pronounced, without any intonation of voice, certain notes. Mme. Sudre at once gave the words correctly. Experiments in *telephonie* were made. M. Sudre's system reduces the transmission of signals to three sounds expressed by the trumpet, the drum, or the cannon; or, in the event of high winds preventing sounds from being heard, to three signs. The Emperor gave the order, "Construct batteries on the height," and M. Sudre produced three sounds on the clarion; Mme. Sudre at once repeated the phrase. Another order, given by General Espinasse, was repeated by the drum, and translated instantaneously by the lady. The order, "Let the artillery paralyze the fire of the enemy's battery," was transmitted by taps on the table, to imitate cannon, and was in like manner at once repeated by Mme. Sudre. The Emperor asked if proper names and the names of towns could be transmitted by the system, and being answered in the affirmative, wrote the name of Nabuchodonosor; some sounds from the trumpet enabled Mme. Sudre to repeat the name aloud. The Emperor expressed his satisfaction at what he had witnessed. He then graciously invited Mme. Sudre to sing one or two *morceaux*, after which his Majesty dismissed her and her husband with marks of his munificence.

## Letters Patent.

# THE FAMILY CIRCLE.

## Scientific.

### Chemistry for the Million.

Having before given the names and a brief description of the more abundant elements in nature, the compound resulting from these will next claim our attention. The figures prefixed denote the proportions of each ingredient and of the compound Thus, read the first;—8 lbs. of oxygen, combined with 1 lb. of hydrogen, form 9 lbs. of water; and so the others, putting "combined with" after the first word in each line, and the word "form" after the second.

8 OXYGEN 1 HYDROGEN 9 WATER.

Water with other substances forms *hydrates,* as hydrates of lime, of iron, etc.

16 OXYGEN 6 CARBON 22 CARBONIC ACID.

Carbonic acid forms Carbonates, as Carbonate of Lime, (chalk, marble, lime-stone,) Carbonate of Soda (washing soda,) bi-carbonate of soda, (cooking soda) etc.

14 NITROGEN 3 HYDROGEN 17 AMMONIA.

The three compounds above, water, carbonic acid, and ammonia constitute a very large part of the food of all growing plants. Nothing could grow if deprived of either of them. Decaying plants and animals are always giving them off; and living, growing plants are always receiving them.

USES OF WATER IN AGRICULTURE.

The influence of water on rocks, soils, manures—whatever goes to make up the seed bed and standing place of plants—is prodigious.

1, *Water is the principal agent in the reduction of rocks to soil. Without it we can hardly suppose that soil would ever have been formed.* The whole surface of the earth, but for its agencies, must have presented, at this moment, one unbroken mass of rock, with not even a lichen or the smallest stem of moss to variegate its surface. It is water, by its expansion in freezing, that has split the rocks. By freezing in large quantity it has removed the cleft fragments from their beds, and often rolled them down mountain sides, grinding them and other rocks in their fall to powder. By the freezing of water, icebergs have carried large and small fragments thousands of miles; and glaciers have rounded them into boulders, or ground them into minute particles. Running streams have carried down the pulverized rock to form our fine alluvial soils; and standing waters, as oceans, seas and lakes, receiving the fine sediment of streams, have deposited it in the form of outstretched plains or rolling prairies. Large portions of the Gulf of Mexico probably would need but to be upheaved, as other portions of the globe undoubtedly have been, to afford as beautiful plains and prairies as any of our Western States, made up of materials transported by the agency of water from large portions of North and South America, and enriched by myriads of plants and animals that have perished and left their remains mingled with the soil.

2. *The agency of water is constantly improving soils mechanically,* Probably no change, from wet to dry, or the reverse, takes place without meliorating the soil. It is the opinion of observing farmers that some drouths even are followed by good effects; that excessive rains—what we call excessive, perhaps only from ignorance of what we need—are beneficial also; and that for the damage of both we are more than repaid in the after influences on the soil. But however this may be,

whether these extremes are essential to the best influences of water on the soil or not, it is certain that the freezing and thawing process is of vast benefit. Investigations go to show that the fineness of a soil is among its best qualities. Some have gone so far as to say that it matters little what a soil consists of, if it is sufficiently fine; that the New-England granite soils, if as fine as those of the Ohio valley, would be as good. This may seem extravagant, and probably is so, yet all will agree that fineness is a most important quality. Now a December frost, stiffening the ground for eight, twelve, sixteen inches deep, is a silent, quiet operation, but it is one in which an immense mechanical power is exerted. By reason of the expansion of water at the point of freezing, particle is made to impinge against particle, by a slow but irresistible movement, both held as in a vice, and pressed against each other, till probably more particles in an acre of soil are broken up and divided into two, five, or a dozen, than could be effected by the labor of a score of men in a whole summer. Clay soils are rendered less adhesive, and coarse soils (not made up too much of mere silicious sand, that holds no water,) are rendered finer by freezing. Throwing them into ridges in autumn to give the frost greater access, is beneficial.

3. *Water improves the soil chemically—manures it.* Exhalations from the sea, from lakes, rivers and ponds, from decaying animal and vegetable matter wherever found, affluvia from cities, from barn yards and pig-styes, and light, downy particles of solid matter from thousands of sources, are always ascending into the atmosphere. The air is the great receptacle of the world's filth. None of us could live long in cities if it did not lift our bad odors. But the air itself becomes filthy by the operation. It wants washing. It contains, at times, over such a territory as ours, millions upon millions of loads of what we may call manure, because it is made up of the very ingredients which promote plant growth. Water, in the form of rain, washes this out, and brings it back to the soil, where it is wanted. Every drop of rain deposits in the soil ammonia, carbonic acid, various organic and some inorganic matters, embracing probably every ingredient required by the growing plant. It is the same with snow. That snow is the poor man's manure, is no fiction. It is the rich man's also. Neither could thrive but for what the air takes away from cities and towns, sea and land, and the rains and snows bring back and deposit in the fields.

4. *Water preserves manures.* All ammoniacal manures, as those of the stable, the field, the pen, the barn yard, tend to ferment; and if the weather is warm and they are not sufficiently moist, they fire-fang, as the farmers say. The expression is a good one. But what is it to fire-fang? It is to ferment too violently, to become very hot, to evaporate nearly all the water in a manure heap, and to send off its ammonia into that vast recepticle of the atmosphere, not to be lost from the world, but to be brought back, as before explained, in the rain and snow, some of it perchance on the owner's land, but more on other farms within a few thousand miles of him. It is the province of water to prevent this violent, wasteful fermentation, which scatters from one tenth to four or five tenths of the value over the wide world, in the state of invisible gases, and makes it common instead of private property.

5. *Water enables light soils to retain the manure put upon them.* Perhaps a strong clay soil would retain the manure commingled with it without the aid of water. A substantial loam might to considerable extent. But a sandy soil (and, by the way, sandy soils are about as *profitable*, not as *productive*, not equally *capable*, but about as POFITABLE, considering their feasibility, as any others) is not sufficiently retentive to hold the manure till such time as the plants appropriate it to their own

growth, without the aid of water. If we could be assured beforehand of a smart rain twice a week for a whole year, it might be good policy to apply 30 loads of manure to a sandy acre and plant corn. So many rains would hold the manure down—keep it in the soil, instead of letting it go into the air—so that the current crop would appropriate largely from it, and leave the rest for future crops; whereas, in an ordinary season, we should expect less to go into the present crop, little to be left in the soil, and much to go in the form of ammonia and carbonic acid, into the air, to be returned in future rains, as much for the benefit of others' crops as of our own. So much as went into the air would become public property. We suppose that the man who applies 30 loads of manure, in a green state, not composted, to a sandy acre, before one of our hot dry summers, contributes some ten dollars worth to the general productiveness of that region—a tax which the public need not find fault with, but which he would be slow to pay if he knew what he was about.

6. *Water conveys plant food from place to place in the soil.* Liebig says not. "The smallest particles of nutriment do not change their place in the ground while the soil retains them," is his language. Ploughing, harrowing, mixing the soil mechanically are, according to him, the only means of equalizing the nutriment throughout the soil. We are sorry to differ with so great an authority. But as with some German preachers, whose philosophy is better than their common sense, so we think his chemistry is better than his philosophy or common sense either. He reasons, as we understand him, that because, if you pass brown water from the barn yard through a few inches of earth, it comes out pure enough to cook one's breakfast in, therefore no plant food—that which constitutes the impurity of the water—moves from place to place in the ground. We would ask him whether he would drink the brown water when he had passed it through one inch of soil. If he says no, we have the case; for if the plant food, alias the impurities of the water, pass through one inch, then they move in the soil with the water, and that is all we claim. With Liebig we believe in ploughing, harrowing, lifting, stirring, mixing the soil. It can hardly be done too much. But we believe that nature co-works with the farmer at every step; that the falling rain helps him to an equal diffusion of his manures through the seed bed; and that the agency of water is of immense value, not only in equalizing the plant food in the soil, but in carrying it (short distances of course, and the stronger the soil the shorter the distance) to meet the roots of plants.

What we have said thus far of the uses of water in agriculture, relates to its agencies in the formation of soils and the preparation of soils and manures to become a fit seed bed and standing place for plants. Of its agencies in the germination of seeds, in conveying food for the growth of plants, and in bringing them to maturity, we will speak in our next.

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## The Salt Works at Syracuse.

Your readers may be pleased to learn something about the Salt Works at Syracuse. From many years residence near them I will venture to say a few words in regard to them.

The salt-blocks, as they are called, are principally located at Salina, (from *saline*,) Syracuse and Geddes, but there are several large blocks at Liverpool, a village four miles distant from Syracuse. The solar evaporating vats are spread over a large district, and occupy, perhaps, over 300 acres of land. The land is reserved by the State for constructing the vats upon. The season being an unusually wet one in this vicinity, not much solar salt will be made. It requires a good deal of sunshine to make solar salt successfully, and the vats should be thoroughly made in order to hold all the water safely. These vats, to which we have alluded, are so arranged that the covers can be removed at any time in a few moments, and replaced as soon. In case of a heavy thunder shower the covers are all shoved over the vats, and in this way no rain water is admitted into them. The solar salt is very nice for salting butter. It is usually prepared for this purpose by grinding in salt-mills, which do a driving business in putting up "fine salt" in small "shilling bags." This solar salt is usually crystalized, and assumes many queer shapes.

The number of salt-blocks about and in Syracuse is about 305. Each block makes about 20,000 bushels of salt annually. From this amount to each block, you can easily calculate that there are nearly 6,000,000 of bushels of salt manufactured at Syracuse every year. Some of the blocks fall short of 20,000 bushels, but the solar evaporating vats make up the amount.

The expense of keeping the different works in water is immense. The water is supplied by the State, and is carried to a large reservoir by huge pump-logs bored out for the purpose. There must be many miles of these pump-logs, for they reach over a large territory. The salt water is conducted from the springs to a certain elevation by force pumps, and then goes into the reservoirs.

The amount of wood that is consumed annually is immense. Wood is getting to be a scarce commodity here, and demands now at the works from $3 50 to $5 50 per cord, according to the kind, hard or soft wood. The kettles in the blocks are placed in long arches, from 20 to 30 kettles occupying each arch. The front kettles boil salt down the fastest and the hindermost ones boil more moderately.

The "bitterns," as the sediment is called, is thrown out of the kettles, and may be seen in large quantities near the blocks. Some farmers make use of this substance to put on their lands. I have no experience in its use.

The salt blocks are rough looking buildings, and will last a great number of years on account of being pretty well saturated with salt. They present a queer appearance to the stranger, and I should judge emit about as much smoke and vapor as the volcanoes of Italy.

When the salt business first started at Salina, some fifty or sixty years ago, wood was very abundant immediately in the vicinity of the works, but now is principally boated into the city by scows and wood-boats. It is carried from the banks of the Oswego, Oneida, and Seneca rivers, and from the Erie and Oswego canals. Some of it is boated at least forty miles.

The experiment of burning coal in the arches has, I believe, proven a failure. It burns the grates out too often, and there are other objections to its use which I can not now make a note of.

"The City of Conventions" (Syracuse) owes its growth and prosperity to the manufacture of salt within its corporate limits. At one period, where the city now stands, the land was a dense cedar swamp almost impenetrable from any quarter; but now the country assumes a different aspect, and is noted for its garden products. So how easy it is to see what changes these salt springs have made in this growing city.

There has been a good deal of dispute with respect to the qualities of the Onondaga salt compared with that coming from Turk's Island. I am of the opinion that the Syracuse salt is as good for all purposes as any now in use, but may be prejudiced in its favor. When it is made right, it is an excellent salt, and meets the approbation of the butter-making community generally. A great many thousand barrels are shipped annually to the west by the "Salt Company," the said company binding its members to give to the manufacturer so much per barrel at the works. The "Salt Company" receive a certain per centage upon each barrel sold, but advance the money to the manufacturers previous to removing the salt from the blocks, or, at least, the money is paid in due season. There was a surplus on hand last season which was not disposed of until this year. It is presumed all the salt will be sold in the course of the coming winter.

I will conclude this article by merely stating that all efforts at boring for the main body of salt have proven failures. Large sums of money have been expended in this direction. It would seem that the great deposit does not lie in this vicinity. There must be some great subterranean passage by which the salt water finds its way into the valley of the Onondaga lake, and therefore centuries may pass away ere the greatfountain of salt is found. Yours, etc., W. Tappan.

Baldwinsville, N. Y., Sept.

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## THE WEATHER.

Appearance of Birds, Flowers, etc., in Nichols, Tioga Co., N. Y., in August, 1857.

**By R. Howell.**

*Place of Observation, 42 degrees North, on a Diluvial Formation, about 40 feet above the Susquehanna River, and 800 feet above tide, according to the survey of the New-Yrok and Erie Railroad.*

| Aug. | 6 A.M. | 1 P.M. | 9 P.M. | | | Remarks. |
|---|---|---|---|---|---|---|
| 1 | 62 | 84 | 61 | S.&N. | Cloudy. | Sprinkle of rain in afternoon from north. |
| 2 | 55 | 81 | 58 | North | " | |
| 3 | 53 | 88 | 62 | " | " | |
| 4 | 55 | 89 | 68 | " | " | Light rain in the evening. |
| 5 | 65 | 68 | 58 | " | " | |
| 6 | 57 | 82 | 58 | West | " | Fog in the morning. |
| 7 | 56 | 87 | 63 | S. W. | " | |
| 8 | 61 | 91 | 68 | S.East | " | Shower went south at 6 P.M. Lightning in evening. Hard shower 11 P.M. |
| 9 | 64 | 84 | 61 | North | " | Oats ripe. |
| 10 | 60 | 74 | 62 | South | " | Light sprinkle of rain during the day. Hard |
| 11 | 61 | 77 | 56 | North | " | rain in the evening. |
| 12 | 49 | 81 | 65 | S.East | " | Fall cricket first heard in the evening. |
| 13 | 59 | 90 | 70 | S. W. | " | Few drops of rain in the morning. |
| 14 | 68 | 92 | 78 | West | " | Light sprinkle in the afternoon. |
| 15 | 65 | 79 | 59 | North | " | Light sprinkle at 11 A.M. |
| 16 | 57 | 76 | 60 | N. W. | " | Corn in the field large enough for eating. |
| 17 | 62 | 84 | 60 | S.East | " | Light rain before light; short shower at sun- |
| 18 | 58 | 72 | 54 | N. E. | " | [rise; two hard showers in P.M. |
| 19 | 51 | 79 | 60 | S.&N. | " | Light rain in afternoon; hard rain in evening. |
| 20 | 51 | 73 | 51 | North | " | Potatoes found to be rotting very fast. |
| 21 | 45 | 79 | 52 | South | " | |
| 22 | 51 | 70 | 60 | " | " | Light sprinkle of rain in P.M. Hard S. wind. |
| 23 | 56 | 72 | 57 | East | " | Light rain before light; number of squalls in |
| 24 | 54 | 68 | 45 | North | " | Light drizzling rain at sunrise. [P.M. |
| 25 | 41 | 79 | 54 | " | " | Harvest apples about ripe. |
| 26 | 44 | 81 | 57 | South | " | [and evening. |
| 27 | 65 | 72 | 62 | " | " | Light mist of rain in A.M. Hard rain in P.M. |
| 28 | 65 | 80 | 59 | " | " | Hard rain all night. Light sprinkle in morn- |
| 29 | 64 | 73 | 55 | North | " | Light shower in the afternoon. [ing. |
| 30 | 55 | 70 | 50 | " | " | Wild blackberries generally ripe. |
| 31 | 45 | 80 | 58 | West | " | |

## Christianity and Science.

Professor Joseph Henry, the distinguished head of the Smithsonian Institute, testifies that he knows but one man among the scientific men of the United States who is an infidel.

# Domestic.

## Chinese Sugar-Cane in Massachusetts.

Joel Lake, the Topsfield nurseryman, has sent the juice of the sugar-cane, of this year's growth, to the Boston *Journal* office. The seed was planted June 1st, and the stocks are now thirteen feet high. There is considerable of the cane growing along the upper route to Boston, in Topsfield and Danvers, and it has done better there than here. The best that we have heard of in this city was planted in May and is not yet eleven feet high. The yielding of the sap, in Mr. Lake's experiments, is 1200 gallons to the acre, and he reduced it to 100 gallons of syrup. The experimenters are becoming more confident that this cane will be a profitable crop. It stands drought and frost better than corn. We notice that several hundred barrels of this molasses has already been received at New-Orleans, and it may be possible that in these parts it will not be less profitable than the maple groves.—*Newburyport Herald.*

## Fresh Milk.

The *Journal of Commerce* mentions a new discovery of Gail Borden—who has become somewhat distinguished for his various inventions for the preservation of human food—by which families in cities can be supplied with the pure article, without the adulteration of chalk or other admixtures. This fluid also suffers no deterioration from a long voyage.

Mr. Borden's process is simple. It evaporates 750 of the 840 parts of water in all milk, as determined by chemistry, and leaves as a residuum, a thick paste, which can at any time be reconverted into milk by restoring the water. One tea-spoonful of the condensed substance to four of pure water will make rich country milk, precisely as it comes from the cow, while one to five will produce a richer compound than is often sold in cities. The addition of one or two parts of water makes a rich cream.

Mr. Borden has established a condenser (capable of reducing five thousand quarts per day) in Litchfield county, one of the richest grazing districts in Connecticut, where the unadulterated article can be bought for two cents a quart. The heat is applied under a covered kettle, from which the air is exhausted and the water is thus evaporated. The remainder is brought to market. It will be sold in New-York at about 32 cents a quart. This will bring the cost, when restored, by the addition of four times its bulk of water, to sixpence a quart. If any one wishes to use *cheaper* milk, he has only to add another quart of water. The milk trade of New-York is stated by the *Journal* to amount to over $4,000,000 per year. That of Boston must exceed $1,000,000 per year; and if Mr. Borden's invention will really accomplish what is contended for it, it is of no slight importance to housekeepers in this city.

## Soup, Beef Tea, Mutton Broth, etc.

In the preparation of these, our object is the reverse of that which has been previously considered. We desire to take the nutritive and savory principles out of the meat, to a liquid extract of meat, in the form of soup, broth, or tea, the flesh is finely chopped and placed in cold water, which is then slowly heated and kept boiling for a few minutes, when it is strained and pressed. In this manner we obtain the very strongest and best flavored soup which can be made from flesh. Liebig says, "When one pound of lean beef, free of fat, and separated from the bones, in the finely-divided state in which it is used for beef-sausages or mince meat is uniformly mixed with its own weight of cold water, slowly heated to boiling, and the liquid after boiling briskly for a minute or two, is strained through a towel from the coagulated albumen and fibrin, now become hard and horny, we obtain an equal weight of the most aromatic soup, of such strength as can not be obtained, even by boiling for hours, from a piece of flesh." To make the best article it is desirable not to boil it long, as the effect is to coagulate and render insoluble that which was extracted by cold water, and which should have remained dissolved in the soup. It is obvious, from what has been said, that a piece of meat introduced undivided into boiling water merely thickens and apparently enriches the soup. This is effected by the gelatin, which is gradually extracted from the tissues,bones and other parts, but in a nutritive point of view, this ingredient is a fiction, as will be shown in the proper place. Soup-making is a kind of analysis of alimentary substances used in its preparation—a part is taken and a residue usually rejected. Yet it is clear that we shall have the completest nourishment by taking both parts, as the fibre of meat and the softened beans and peas of their respective soups.

## Preserving Green Corn for Winter Use.

One of the greatest luxuries of the table, both in summer and winter, is the sugar or sweet corn. To our taste all other varieties of corn to eat green, are worthless compared with it. Our method is to keep a constant supply, by successive plantings, from June to the period of frost, making the largest planting about the first of July, with an early variety, for drying for winter. This matures usually in September, which is the best season for drying. Our method is this:—When there is promise of a fair day, early in the morning the corn is gathered—such only as is well filled. It is then husked, put into boiling water, and allowed to remain eight or ten minutes. It is then taken out and immediately cut from the cobs with a sharp knife, and spread on a clean sheet upon a roof or scaffold inclining to the south. It should be stirred once or twice during the day, and by night it will become so dry as to be past danger of injury. It should be covered during the night to keep off the dew, and exposed again for two or three days to the sun, when, if the weather is fair, it will usually be perfectly dry, and may then be put into a keg and headed tight, or hung up in a firm linen bag for use.

We have recently eaten corn of the common kind, preserved by a new and easier method, which seemed to be as tender, with all the sweetness and freshness of flavor that it had when first gathered, and may answer equally well in preserving the sweet corn, which we regard as the only variety worth preserving.

It is simply gathered and boiled in the usual manner, fit for the table. It is then cut from the cob and packed in a tight keg or jar, (wood is said to be best,) in alternate layers of salt sufficient to preserve it. Some, in the place of salt, apply a strong brine. When wanted for use, it is soaked in fair water, which must be changed, to remove the excess of salt, and then boiled, adding butter or cream and a little sugar to suit the taste.—*Louisville Journal.*

## Lightning Rods for Shipping.

An invention of Dr. Cushman, of Wisconsin; being made of four copper wires, by a new process which we are not familiar enough with to explain. The conductor has the appearance of a rope, being put in such form by machinery got up for that purpose, which presses or compacts the wires into form, making a beautiful rope, which is intended to be a permanent conductor, forming a backstay or a part of the rigging, passing into a copper plate, which is attached to the ship or vessel in such a manner that it is entirely out of the way; the rope having sufficient power of expansion and contraction to render it pliable and easy to the vessel; the plates being attached in such a way as to be at all times in contact with the water, thus making an unbroken conductor from the top of the mast to the water, being a cheap and reliable protection. Every vessel of any importance upon our lakes should have one or more of them. The different insurance companies would do well to attend to this matter.

Smith & Co. are the manufacturers of this new rope, who have a house at Cleveland, Chicago, Waukegan, Ill.; and Racina, Wis.—*Western Paper.*

## Vermont Horses in the West.

In our report of the State Fair it will be seen that Chas. Semple, of St. Louis, took with him to his western home, a stallion and a pair of matched mares. The number and value of horses annually sent to the Western States would surprise one unacquainted with the extent of these transactions.

Dr. Richard F. Barrett, of St. Louis, who has been boarding at the Lawrence Water Cure in this village for a few months past, recently shipped for that city *eleven* valuable Morgan mares, all animals of the best blood and action. They will make a desirable acquisition to the stock of that region.—*Vermont Phœnix.*

## Love of God.

It has been beautifully said that man's love to God is only an echo called forth by the divine voice. "We love him because he first loved us."

## Healthy Food.

In regard to diet, a plentiful use of ripe fruit should be indulged in. Every family should have the table constantly supplied with *baked apples.* Cooked in this way their preparation for the table gives but little trouble to the housewife, and anything that lessens *her* labor is particularly desirable. For supper we want no better meal than good light bread and rich country milk, accompanied with a plate of good baked apples. And especially for a children's supper, nothing can surpass it. A plenty of stewed tomatoes as an accompaniment for breakfast and dinner is also excellent.—*Ag. Press.*

## Hints to Farmers.

Toads are the best protection of cabbage against lice.

Plants, when drooping, are revived by a few grains of camphor.

Pears are generally improved by grafting on the mountain ash.

Sulphur is valuable in preserving grapes, etc., from insects.

Lard never spoils in warm weather, if it is cooked enough in trying out.

In feeding corn, sixty pounds ground go as far as one hundred pounds in the kernel.

Corn meal should never be ground very fine, it injures the richness of it.

Turnips of small size have double the nutritious matter that large ones have.

Rats and other vermin are kept away from grain by sprinkling of garlic when packing the sheaves.

Money expended in drying land, by draining or otherwise, will be returned with ample interest.

To cure scratches on a horse, wash their legs with warm soap suds, and then with beef brine. Two applications will cure the worst case.

Timber, when cut in the spring, and exposed to the weather with the bark on, decays much sooner than if cut in the fall.

Wild onions may be destroyed by cultivating corn, plowing and leaving the corn in the plowed state all winter.—*Ex.*

## Tobacco Poison.

The French poet, Santeuill, was killed by a little snuff being thrown into his wine glass at the Prince of Conde's table. Bocarmy, of Belgium, was murdered in two minutes and a half by a little nicotine, or alkali, of tobacco. Dr. Twitchell believes that sudden deaths and tobacco are found together, and he sustains this opinion by an array of facts altogether conclusive. The names of scores of men can be given, who were found dead in their beds, or fell dead in the streets or elsewhere; who had been the victims of this poison.

## The Gapes in Chickens.

A correspondent says: "Tell those of your readers who are interested in raising chickens, that a small pinch of gunpowder, given to a chicken with the gapes, will effect a sure and complete cure in from one to three hours time, and leave poor chick healthy and hearty."

## Remedy for Diarrhœa.

The following is said to be very efficacious:

Take a handful of strawberry leaves and pour on them half a pint of boiling water; let it remain one hour and drink the tea. If you can not get boiling water, chew and swallow the juice. This is a most valuable and efficient remedy, It rarely fails to give immediate relief, and performs a permanent cure.

## Poisoning Mice.

Take one fourth oz. powdered nux vomica: half pint common boiling peas; simmer them with as much water as will prevent their burning, for half an hour, and take them off. When any person sows his peas, let him add one third of the poisoned ones to what he intends to sow, and throw them together in the same drills.—*Horticulturist.*

## Defective Religion.

A religion that never suffices to govern a man, will never suffice to save him; that which does not sufficiently distinguish one from a wicked world, will never distinguish him from a perishing world.—*Howe.*

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☞ "The press, the pulpit—and petticoats—the three ruling powers of the day. The first spreads knowledge, the second spreads morals, and the last spreads considerably."

☞ To give brilliancy to the eyes, shut them early at night and open them early in the morning; let the mind be constantly intent on the acquisition of human knowledge, or the exercise of benevolent feelings. This will scarcely ever fail to impart to the eyes an intelligent and amiable expression.

☞ Man feels yearnings which nothing here can satisfy, entertains hopes which on this side of the grave never can be realized, forms designs which by reason of the shortness of his mortal existence can not be accomplished.

☞ Life, properly speaking, is progress, for we commence our pilgrimage here, but only commence it; all nature is in a state of development, and man above all things.

☞ The hog disease has appeared on the farms near Minerva, Mason county and one in Fleming county. One farmer in the latter lost 300 hogs.

☞ To carry a Collins steamer from New-York to Liverpool requires eight hundred tons of coal, enough to keep an ordinary family forty years.

☞ In 1745 hoops were worn as large as now, Sir Robert Strange, fleeing from pursuit after the battle of Culloden, was concealed in the crisis of his trouble by a young lady, who offered to shelter him under the ample folds of her petticoat. To this strange proposal, considering all circumstances, it is not strange that he assented, and here he remained undiscovered. Either love or gratitude suggested the sequel, and they were subsequently married.

☞ It is estimated that the decline of the market values of Railroad Stocks in the last three months, amount to an aggregate of $60,000,000. This immense sum is lost by somebody to be gained by somebody else, for the railroads are worth as much now as three months ago, all for a restless, ambitious, unprincipled spirit, that won't work, and must live out of somebody, no matter who, and grow rich.

☞ A party of ladies, who were proceeding to bathe in a beautiful cove at Geneva, Wis., discovered a young farmer in a thicket watching them, and gave him a sound beating in the hazel-bushes in which he was hid. Served the sneak right. So says Prentice of the *Louisville Journal*, and who will dispute him?

☞ The man who thought he could learn to make boots by drinking "sherry cobblers," has just issued a work in which he attempts to prove that by eating *hops* you will acquire a knowledge of waltzing. Queer old customer!

☞ If we could read the secret history of our enemies we should find in each man's life, sorrow and suffering enough to disarm all our hostility.

☞ In the affairs of life, activity is to be preferred to dignity; and practical energy and dispatch, to premeditated composure and reserve.

☞ Louisiana promises 300,000 hogsheads of sugar against less than one-third of that amount last year; Cuba will come up to the full limit of her past production, if she does not surpass it, under the tumults of the late high prices. Brazil shows no falling off; Mauritius continues the ratio of increasing production that has doubled her crop in seven years, and it is doubtful whether India will not yield as large a supply as ever.

☞ The hoop question, like most others, has two sides to it. The ladies take the *inside*, and of course we must take the other.

☞ "The fault, dear Brutus, is not in our stars,
But in ourselves, that we are underlings."

☞ A pretty pair of eyes the best mirror to shave by. "Yes," replied a bachelor, on reading the above, "many a man has been shaved by them."

# Children's Page.

Well, children, here we are again, at the end of another month. To us it has been a very short one. We hope it has with you.

But with us there is a draw-back—one which you hardly need feel, but which we can not help feeling sensibly—for we have been inquiring, within, what we have done this month, and really we can not make out a very large history of good things done.

Uncle John—you may call us so if you like—is at an age when half a century has gone (how long that seems to you,) and when something is to be done, and done pretty soon, if ever. You are at an age when there is less for you to do, and more to learn. Nevertheless, there is something for you to do, as we will show.

We have much to do; you have much to learn. While we strive *to do something,* you must strive *to become something;* yes, to become something—to be good and useful, and perhaps great. The last is not of much consequence, and then it is pretty sure to come, if you attend to the first two. *To be good* and *to do good,* is the text on which we want to give you a bit of a lay sermon for children.

Like the rest, we must have some divisions. They used to have about thirty long ones. Three short ones are enough for those times; 1, to *be* good; 2, to *do* good; 3, to show that both are about one and the same thing, since persons that are really good are very apt to be showing it by kind and civil actions, and those that are bad generally show it by unkind, uncivil, selfish and dishonest acts.

I. *To be good.*—God is good beyond all others. In order to be good we must be like him. What an idea for children, and yet these children can begin to comprehend it. They understand that "God is love;" that is, that he loves other beings who are capable of happiness and of misery, and that he delights to see all happy. Now you can not be like God in his greatness and his power. The greatest man living can not. But you can cherish a kind, loving disposition, and that is the greatest step which any mortal has ever taken towards being truly good.

Next to God, your parents are your examples. They love you. They wish you to be happy. When they grant your requests, it is because they love and desire your happiness. If they ever deny you, it is because they are unable to grant what you ask, or because they see that it would not really be well for you. That is a beautiful arrangement by which children, while they yet know little of the world and have almost every thing yet to learn, are placed under the direction of others who have been longer in the world, who know more of its dangers, and who have a parent's heart to love and care for them; and if you will strive to be as kind and affectionate to one another and to every body as your mother is to you, you will hardly fail of having an example calculated to advance you in goodness.

Among others whom you know, you will see some who seem to delight in vexing the children, getting away their play-things, disappointing them, making them and every body else unhappy. We suppose you do not like such. Well, then do not be like them. And you will see others who are always saying a kind thing, remembering to bring presents for the children, and seeming to delight in making all around them happy. The more you try to be like these the better.

II. *To do good.*—Here again, God is our first example. You can not be like him to create worlds, to govern them, to make his sun shine, to open the beautiful flowers, to mature the luscious fruits. No, no; nor can all the kings and queens of the earth. But you can make somebody very happy or very unhappy. Think of it.

If you had a large, blushing peach, and should break it open, and give your little sister half, she would be happy. If you had two such peaches, and should insist upon eating both, while your little brother was looking on, he would be unhappy. The veriest child can create happiness, or destroy it. Your father may seem to you a stern man, quite beyond your reach; but we will answer for it, he is happier when you meet him affectionately than when he sees you sour; when he sees you kind and obedient to your mother than when he sees you pouting; when he sees you generous and noble hearted than when he sees you mean and selfish. O, yes! and your mother is happier, and your brothers and sisters, and all about you.

III. When we see persons always saying and doing kind things, striving *to do right* always, and often doing a little more than could be absolutely demanded, we are apt to form a high opinion of them. True, we can not see their heart; but we see the streams that are always flowing from it, and we see that they are good. If we see them saying and doing unkind things, excessively careful not to do more than could absolutely be demanded of them, the inside goodness becomes doubtful, because the streams are not remarkably good, and these are all we can see.

Children, you have but just began life. Take advice of those who have seen the world longer than you have. Your parents are your best friends, your safest advisers. If we tell you any thing different from what they do, believe them, not us. But we rather think they will agree with us, when we tell you that the more you try to *be good* and to *do good*, the more kindness and love you will meet from others, and the happier you will be.

## Answer to Questions in Last.

One boy replies that a shower of one inch average would give on an acre 214 tons and 690 lbs. of water; on a square mile, 73,180 tons and 1600 lbs.; on a township of fifty square miles, 3,659,040 tons; on a county forty miles square, 117,089,280 tons; and on a State of 50,000 square miles, enough to fill a canal twenty-five feet wide and four feet deep, for 220,000 miles, long enough to reach about nine times around the globe.

## Decision.

"I don't see why you do not like them. They are a good fit, and the best boots we have in the store. Them's a good fit."

The above words were addressed by a storekeeper to a customer, evidently a farmer, who was examining a pair of boots with a view of purchasing, and who, when the clerk had finished his sentence, regarded him sternly for a moment, and then said firmly, "Are you buying those boots, or am I?" "You are, I suppose," said the person addressed, a little nettled. "Well sir," said the farmer, "*I* know what kind of goods I want without any of your assistance. *I* say these boots don't suit me. If you have others show them, and if not I will go where they are to be had, *and I don't think I shall take you along to tell me what I want!*"

There was decision. Some people will go to a shop to purchase goods, and in stead of depending upon their own judgment, allow the seller to force things upon them which they do not want, and frequently become dissatisfied with their purchase before they leave the store. Manifest decision in everything. O. A. G.

## Take what you Give.

What do we often drop, yet never stoop to pick up? A hint.

# Book Notices, etc.

The Illustrated Family Gymnasium, containing the most improved methods of applying Gymnastic, Calisthenic, Kinesipathic, and Vocal exercises to the development of the Bodily Organs, the Invigoration of their Functions, the Preservation of Health, and the cure of Diseases and Deformities; with numerous illustrations; By R. T. Trall, M.D. Fowler & Wells, publishers, 308 Broadway, New-York. 1857.

What a title page! and yet it describes but what the author has earnestly attempted, and we think has ably accomplished, viz., to furnish an ample range of illustrations for the attainment, by the cheapest and simplest means, within every one's reach, of freedom from deformity, health, strength, agility, beauty, and long life.

We have no more to say of the book. Of its object we would speak in terms to be heard from New-Brunswick to Mexico, if our voice was strong enough to be heard so far. Americans, you are missing it. By spitting life away in chewing, or smoking yourselves to skeletons, or snuffing spoilt tobacco and hurtful aromatics; by absorbing poisoned liquors, instead of stickling for good, or drinking none; by a restless, figitting ambition to be suddenly rich; by your love of votes and a reckless hurry to be shabby politicians, instead of being honest business men; above all by disqualifying yourselves by these and other vices in early life for being the parents of sound, healthy offspring, you are sinning at a rate that none but the thoughtful and far-seeing can realize, against the health of posterity and the future greatness and happiness of our country.

This is a heavy charge, but too many of us deserve it. We are not as conservative of health as we ought to be, and we are far less observant of the influence of our own doings, of our virtues and our vices, upon the destinies of our race, than becomes an intelligent people. That "the iniquities of the fathers are visited upon the children," *physically*, is too evident to doubt. It is written in the Bible; but we need not go to the Bible to learn it. It is extant, patent, wide open every where—is seen wherever the human race is seen. Every man and woman, whose conjugal life is not yet achieved, ought to see it, feel it, and abstain from foolish and hurtful indulgences, from higher considerations than any that affects the welfare of any one being. Young man, let alone that tobacco; throw away your cigar; flee from adulterated liquors—and you can hardly get any other these days—as if all the evil spirits in the universe were after you. The groggery will spoil you, and the greatest fear is, that it will not spoil you soon enough to prevent your leaving a spoilt image of your spoilt self behind you.

The physical in our being, whether relating to our own health, or the untold evils of a half spoilt parentage on posterity, or the training of children with the first and ever constant care to make them hale, sound men and women, is too much neglected. Encourage in your boys manly exercises. Work them; yes, work them. If you are rich as Cresus, no matter. Give them something, occasionally at least, in the way of employment, that they may have the high enjoyment of feeling that they are useful, helping somebody, doing good. It is the best feeling any mortal ever enjoyed. Why should rich men's sons be deprived of it? And then your daughters—are they up in the early morning? do the garden walks feel their nimble feet? do the roses blush less beautiful by the comparison of lips and cheeks tinted by morning zephyrs; are they helping their mother, when that is needful? are they learning to make hoe-cake and hasty-pudding, supawn, mush, whatever you call it? yes and pound cake, breakfast cake, pies for dinner, poor-man's cake, rich-man's cake, and all the rest? and more, are they learning the luxury of doing good? When you lay out and adorn your grounds are the wife and daughters out, exercising an exquisite, womanly taste, counting on the effect of that tree you are setting when full grown, seeing how this winding path sorts with that straight fence, and reckoning where luscious fruits may combine utility with beauty. Or if their hands, a little softer perhaps than yours, should seize the proper implement and round off an unseemly prominence, what harm would be done? And where is the old side-saddle that your daughter's grandmother used to ride on? Have the rats eaten it, and have you got no other?

But perhaps we say too much. We would not be always talking in this strain if it were not a matter of prime importance. The fact is, we want that some of the old American blood should survive all the onslaughts of foreigners. But it never will, unless we cherish good habits and educate our children to be hale, stout, physically able men and women. And will this spoil them intellectually? Will it hurt them as ladies and gentlemen? Will it dwarf them morally? Reader, you know better. It does not take a frail helpless thing to make a lady. It does'nt take a weak, shamble-legged thing to make a gentleman. And surely it does not require an imbecile, in body, to make a giant in mind. A sound body is the substratum of all intellectual greatness, not a hindrance, but a help to all that is intellectually and morally great and good.

Sorgho and Imphee, the Chinese and African Sugar Canes By Henry S. Olcott, Esq. A. O. Moore, 140 Fulton street, publisher. New-York. 1857.

This work contains 350 pages, 12mo, and treats of the origin, varieties, and culture of these two plants, which it is hoped will prove of immense value to our country. The prominent topics are, "Their value as a forage crop, the manufacture of sugar, alcohol, syrup, wines, beer, cider, vinegar, starch, and dye stuffs; "with a paper by L. Wray, Esq., of Ceffrasia, and a description of the patented process for crystalizing the juice of the Imphee. It promises a great amount of information, specially valuable at the present time; and from a cursory perusal of the work, but more especially from what we know of the author's zeal and ability, we are sure its promises are well redeemed. The work is published in the best style of the firm whence it emanates, which is saying much for its typography and style of execution. As stated in our last, we will forward this volume, prepaid, on the receipt of the publisher's price, $1.

E. N. Wade's Music Store, Boston.—We can not forget our old friends in our regard for more recent ones. Wade's music store is one of the best in Boston, and his publications are numerous and valuable. Some of his recent issues of sheet music are very beautiful. The Fisherman's Cottage, by Weiss, words by Longfellow, and in his volume of poems they are thought worthy of a beautiful illustration. "May guardian angels hover o'er thee," is another beautiful ballad, music by Frank Remer. "Soft and gentle twilight," by Lindley, is also beautiful.

White Lies, part 2d, by Charles Reade, published by Ticknor & Fields, is on our table. The plot thickens, and the interest of the story much increased. Four parts complete the story.

## United States Agricultural Fair at Louisville, Ky.

MARSHAL P. WILDER, PRESIDENT.

This Fair came off on the 1st, 2d, 3d and 4th of September. By the glowing accounts in the papers of Louisville, we are justified in the conclusion that there was a *time*, and a good one too. The weather was most propitious. The heavens smiled, the breezes fanned, and even the hotel-keepers didn't swindle the thousands assembled, after doing all they could, more than they could comfortably, to provide for them.

As this Fair was held a thousand miles from us just at the time we were going to press with our September issue, we could then publish nothing from it; and now what would have been news at that time, is a month old. We must content our selves, therefore, with barely stating that so far as we can learn, the indications were highly favorable, alike honorable to the society, and encouraging to all who wish for our country a higher agricultural condition.

Men who are doing so much as some of these Ohio, and Kentucky and other Western farmers, for the improvement of horses, horned cattle, sheep and swine, ought to enjoy a wide spread and lasting fame. They are doing what will greatly benefit our generation, and redound to the good of generations to come. Their names ought to be blazoned by the press; their stock should be advertised gratuitously; and we are glad to see that the daily and weekly press has done its duty.

Had our October issue been nearer the time of the show, we would have copied the entire list of premiums awarded, and that with a view to benefit the receivers, both by contributing to a well earned fame, and by making their business known. But at this time it hardly seems worth while to exclude other matter for what the dailies and weeklies have done so well.

## Norwich Route—The Commonwealth.

Though we know the high reputation of the boats of the Norwich route, we had never experienced the comfort of a trip in the Commonwealth till within the last month. It is a beautiful as well as an immense structure. Her length is three hundred and eighty feet, and her other dimensions are proportioned, and her frame so firm that she moves through the water with remarkable ease. Her births are admirable, and her state-rooms uncommonly desirable. Her engine is counted as a sixteen hundred horse-power.

## Testimonials.

A gentleman of great practical skill in agriculture, and thoroughly versed in those sciences which throw light upon the soil and its cultivation, says:

"In this periodical is found a pleasing variety of matter pertaining both to agriculture and the mechanic arts; a combination of thought and interest that never should, and never can be, with propriety, separated; and while these two are caused to go hand in hand, the great field of science is not left unexplored."

"Among the many periodicals upon the subjects of agriculture, science and art, I consider this among the foremost, and take great pleasure in commending it to favorable notice."—J. Bernard, *Prof. of Mineralogy, Geology, and Botany, in the Ohio Agricultural College.*

This is beyond all comparison the most valuable agricultural work published in the United States. Every farmer who wishes to keep himself properly posted in his profession, will do well to become a subscriber for this important and truly valuable work. —*Geneva (N.Y.) Courier.*

The price of this excellent Farmers' Magazine has been reduced to $2 a year, with no diminution in the quantity or value of its contents. It is, in fact, one of the very best agricultural monthlies published.—*Independent Republican.*

It has the impress of talent, research, and industry on every page, and while it has these, it is courteous and true to sections as well as individuals.—*New-England Farmer.*

This periodical will distance anything in its peculiar province published in America. —*Genesee Argus.*

## New-York Markets.

[From the N. Y. Times, Sept. 26.]

The Produce Markets have been very much injured by the pressure for money during the past week. The receipts of the leading articles were on a pretty large scale, and receivers were anxious sellers. These circumstances worked against any prominent improvement. Yet, Breadstuffs were freely dealt in, especially by exporters, whose orders could be executed as prices here fell within their limits. This export movement led to an advance in freights, the shipping accommodation having been inadequate to the requirements of the trade. Towards the close, favorable news was received from Europe, which stimulated the demand for grain for export at rising prices, chiefly for Wheat and Corn. Oats were very freely offered at much reduced quotations, yet they were lightly dealt in. Advices from the principal markets of the interior report heavy arrivals and limited sales of Oats, prices generally leaning in favor of purchasers. Rye and Barley were plentier and cheaper, with a moderate inquiry for each.

### THE COTTON CROP.

Cotton has been lightly dealt in throughout the week at nominally unchanged quotations. The reported sales do not exceed a daily average of 500 bales. The export movement from first hands continues. The total exports from this port since the 1st inst. reach 5,368 bales, against 5,639 bales same period last year. Our available stock is now but 6,645 bales, against 25,213 bales this time last year. The receipts at all the shipping ports to latest dates this season, which commenced with the 1st inst., have been 7,324 bales, against 38,961 bales to the corresponding period of last season. The total exports from the United States, so far this season, have been 6,149 bales, against 8,694 bales to the same date last season. The total stock on hand and on shipboard in all the shipping ports at the latest dates was 27,648 bales, against 61,118 bales at the same time last year. The stock in the interior towns at the latest dates was 5,353 bales, against 3,993 bales at the corresponding dates a year ago.

### SUNDRIES.

Poultry is active at former prices.

| | | | |
|---|---|---|---|
| Potatoes—Junes, ℘ bbl | $2 00 *a* $2 25 | Turnips—Flat, ℘ bbl | $ 50 *a* 75 |
| Potatoes—Mercer, ℘ bbl | 2 75 *a* 3 25 | Pumpkins—Yankee, ℘ 100 | 4 00 *a* 6 00 |
| Potatoes—Dykeman, ℘ bbl | 2 50 *a* 2 75 | Pumpkins—Cheese, ℘ 100 | 5 00 *a* 6 00 |
| Potatoes—Peach Blow, ℘ bbl | 2 50 *a* 2 75 | Squashes—Marrow, ℘ bbl | 1 25 *a* 1 50 |
| Potatoes—Sweet, Va., ℘ bbl | 2 50 *a* 2 75 | String Beans—℘ basket | 37 *a* 50 |
| Potatoes—Sweet, Delaware, ℘ bbl | 3 00 *a* 3 25 | Beans—Lima, ℘ bushel | 50 *a* 62 |
| Onions—Rareripes, ℘ 100 strings | 3 00 *a* 3 50 | Corn—Sweet, ℘ 100 | 50 *a* 75 |
| Onlons—Red, ℘ bbl | 1 35 *a* 1 50 | Corn—Common, ℘ 100 ears | 50 *a* 70 |
| Onions—White, ℘ bbl | 1 75 *a* 2 00 | Cabbages—℘ 100 | 1 00 *a* 3 50 |
| Onlons—Yellow, ℘ bbl | 1 75 *a* 2 00 | Cauliflower—℘ doz | 87 *a* 1 00 |
| Beets—℘ 100 bunches | 1 00 *a* 2 00 | Kohl Rabi—℘ 100 bunches | 2 50 *a* 3 00 |
| Carrots—℘ 100 bunches | 2 00 *a* 3 00 | Egg Plants—℘ doz | 50 *a* 62 |
| Parsnips—℘ doz. bunches | 37 *a* 44 | Leeks—℘ 100 | 2 50 *a* 3 00 |
| Blackberries—Lawton, ℘ 100 q. b's | 25 00 *a* — | Okra—℘ 100 | 20 *a* 25 |
| Whortleberries—℘ bushel | 1 50 *a* 2 00 | Celery—℘ dox | 75 *a* 1 00 |
| Cranberries—℘ bbl | 8 50 *a* 9 00 | Garlic—℘ 100 | 7 00 *a* — |
| Chickory—℘ 100 | 75 *a* 1 00 | Peppers—℘ 100 | 37 *a* 50 |
| Cucumbers—Pickles, ℘ 1000 | 2 00 *a* 2 50 | Butter—Orange Co., pails, ℘ ℔ | 25 *a* 28 |
| Tomatoes—℘ basket | 25 *a* 37 | Butter—State, ℘ ℔ | 21 *a* 23 |
| Apples—Common, ℘ bbl | 1 50 *a* 2 00 | Ohio and other Western States, ℘ ℔ | 14 *a* 18 |
| Apples—Table, ℘ bbl | 3 00 *a* 4 00 | Lard—In bbls | 15½ *a* 16½ |
| Apples—Fall Pippins, ℘ bbl | 3 00 *a* 5 00 | Lard—Kegs | 16 *a* 16¾ |
| Pears—Cooking, ℘ bbl | 2 50 *a* 3 00 | Cheese—℘ ℔ | 8 *a* 10 |
| Pears—Seckel, ℘ bbl | 5 00 *a* 8 00 | Eggs—Fresh, State, ℘ doz | 15 *a* — |
| Pears—Common, ℘ bbl | 1 50 *a* 2 00 | Eggs—Western, ℘ doz | 16 *a* 12 |
| Pears—Bartlott, ℘ bbl | 12 00 *a* 16 00 | Fowls—℘ pair | 88 a 1 00 |
| Peaches—Jersey, ℘ basket | 1 50 *a* 2 50 | Chickens—Roast, ℘ pair | 63 a 1 00 |
| Peaches—Delaware, ℘ basket | 1 75 *a* 2 25 | Chickens—Broilers, @ pair | 50 a 63 |
| Peaches—Extra, ℘ basket | 2 50 *a* 3 00 | Ducks—℘ pair | 75 a 1 25 |
| Plums—Damsons, ℘ bushel | 3 50 *a* 4 00 | Turkeys—℘ ℔ | 20 a 22 |
| Plums—Peach, ℘ bushel | 3 00 *a* — | Turkeys—Spring | 88 a 1 25 |
| Plums—Egg, ℘ bushel | 4 50 *a* 5 00 | Geese—Each | 1 00 a 1 50 |
| Grapes—Fox, ℘ ℔ | 6 *a* 7 | Pigeons—Squab, ℘ doz | 1 50 a 1 63 |
| Watermelons—Prime Jersey, ℘ 100 | 15 00 *a* 25 00 | Pigeons—Wild, ℘ doz | 63 a 75 |
| Watermelons—Common, ℘ 100 | 2 00 *a* 4 00 | Woodcocks—℘ doz | 3 75 a 4 50 |
| Nutmeg Melons—Common, ℘ bbl | 50 *a* 75 | Reed Birds—℘ doz | 31 a 88 |
| Nutmeg Melons—Primes | 1 25 *a* 1 75 | Plover—Grass, ℘ doz | 2 50 a 3 00 |
| Turnips—Rutabagas, ℘ bbl | 1 25 *a* 1 50 | Roasting Pigs | 1 75 a 2 [illegible] |

### REMARKS ON THE BEEF MARKET.

A cool, comfortable day favored the outdoor transactions of the cattle market, which was much more lively than last Wednesday, although higher prices were only obtained upon the very few droves of good stock. There is always a demand for fine, fat cattle, of moderate size, no matter how abundantly the market is supplied with common and poorer grades. This class was especially in demand to-day. There were quite enough light, thin steers and cows, with a sprinkling of coarse oxen and stags. We call the market ¼c.*a*½c. higher on a few of the prime cattle, but no better on the majority of very common stock, a part of which was left over from last week. The numbers at Allerton's were 3,472 for to-day, and 2,722 for the week. Last week the corresponding numbers were 3.239 and 3,464, showing a falling off of about 750 head. The footings give 3,635 as the weekly sales at all the markets, which is more than the general average of last week. Butchers had bought quite freely at Bergen and the city markets, which, with a good supply, laid in last Wednesday, in a measure curtailed their wants to-day, so that the yards were barely cleared at night. About 600 cattle were either purchased at Buffalo and Albany for the Brighton market, or taken there by owners, and some 500 or 600 head were sent into the country from those points as store cattle.

### MILCH COWS WITH CALVES.

Milch Cows are sold at each of the above yards, *usually with their calves at their sides.* The prices vary somewhat with the supply and the demand, and vary greatly, of course, upon the milking value. The particular fancy of the buyer has also considerable to do with the price. Not unfrequently a Cow is sold at $90*a*$100 or even $120. The general price throughout the year for ordinary Cows is $30 to $40 or $50. Quite a number sell above $50, and more, perhaps, below thirty. We often see apologies for Cows go at $20*a*$25. The weekly reports from the different yards will give the weekly fluctuations. There is scarcely any variation in prices, or the market generally, since our last report. Quite enough are offering for the present demand, which has increased of late.

### VEAL CALVES.

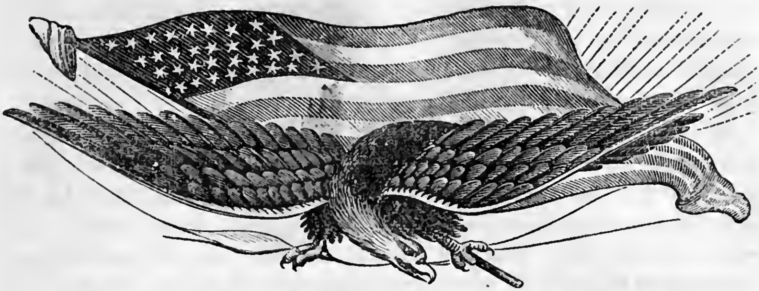
Veal Calves are sold by live weight, each animal being weighed alive at the time of sale. "Bobs," that is, Calves a few days old, are usually sold by the head at such prices as can be agreed upon, sometimes for but little more than the skin is worth. The markets have been well supplied the past week, the receipts being 150 in excess of the preceding week. Prices remain unchanged, with a little more briskness in the market.

### SHEEP AND LAMBS.

These are chiefly sold at Allerton's, Browning's and Chamberlin's, at so much per head for a particular lot of Sheep or Lambs, or of the two together. They are also frequently sold by live weight, as this is readily ascertained. The actual prices at the different yards seldom vary greatly. The difference in reputed prices is generally due to variation in the quality. When they are sold by weight, it is usually the *net* weight, which is ordinarily one-half what they weigh when alive, the pelt and offal making the other half. If fat and small-boned, they will dress 55 lbs. and in some cases 60 lbs. per hundred. The average run is about one half of the live weight. A falling off of 1,300 head of live Sheep from last week's footings, is about made up by arrivals of dead Sheep from Albany. Prices are a little firmer, and an advance may be quoted on good stock.

### SWINE.

These are sold alive at so much per lb. gross or live weight. Considerable numbers are sold at Allerton's, Forty-fourth street, and at various other yards, while large droves are sold direct from the cars or boats, and driven immediately to the various slaughter-houses. Receipts have been moderate, being about 2,200 from all sources. One lot of fat Hogs, on their way to this market, were wholesaled at Albany, at 7½c. This is the highest market price to-day.




# AMERICAN FARMERS' MAGAZINE.

VOL. X. NOVEMBER, 1857. No. 5.


## Division of Labor.

At a recent fair of the "Hampshire, Hampden, and Franklin Agriculture Society," held at Northampton, Mass., the orator of the day Ex-Governor Everett, illustrated this subject by comparing Massachusetts now with what she was half a century ago; "Then," said he, "agriculture was almost the only element of our domestic industry. There were then only 15 cotton mills in the country, and not one item in ten now contained in our industrial statistics had an existence. Now we can show a million of dollars of our productive industry for every day in the year."

And so the workers of Massachusetts are paid a million a day for the toil of heads and hands. What a pity that her statistics do not run back fifty years. But we venture to say that they would show an annual industry of less than one-twentieth of the present. Think of the whole population grubbing among rocks and boulders, not more than half a million acres in the whole State fit to cultivate without costly improvements, and no capital to make improvements with; think of a glut of agricultural produce at that, everybody having a little of that commodity and nothing else to sell, and nobody wishing to buy it, because all grubbed for themselves in that time, and if they got any money, paid it for foreign productions; think of a farmer carrying his veal twenty miles to a little country town, selling it for 2½ cents a pound, and taking slazy India cotton at 5 cents a yard for pay; (we have seen that done within much less than fifty years;) think of the whole wealth of the State, consisting at that time of old brown school-houses, that could but just stand alone, in churches so ugly that the evil spirits certainly would not trouble the worshipers unless they are devoid of all taste for architectural beauty, in agricultural implements that would make any decent horse laugh if he should see them now-a-days, and in land that, as things then were, was better to emigrate *from* than to immigrate to; and you have a pretty good view of what Massachusetts was fifty years ago.

Her people toiled prodigiously, and got little for it. Still they toil. It is their nature. Soil, climate, education, every conceivable influence, all conspire to make them work. But the difference is that now they get something for it. They earn a million a day. And what has made this change? Manufactures. Not that manufacturing labor is better paid than agricultural, but that agricultural labor is better rewarded when manufacturing is carried on in its neighborhood. In our humble opinion Massachusetts, and we ought to know something about her, is naturally the worst State in this Union for agricultural purposes. On the whole, we do not believe there is another spot on the globe, where, till the last fifty years, the people toiled as hard and got as little for it. The little, which the people scattered over the 5,000,000 hard acres of the State, earned in a summer, the Boston merchants were sure to take before the next spring. Enough was retained this side the Atlantic to make a few prince merchants in Boston, and the rest went to Europe to pay for doorlocks which wouldn't keep a rogue out, and sometimes wouldn't let the owner in, for log chains that wanted tinkering amazingly often, and for cotton shirting that wouldn't keep *a fellow* warm, nor always cover his nakedness very long.

Commerce had every thing in its own way, and its way was to take to itself about all the earnings of the people. Their system was essentially the free-trade system, and it cursed the people. They worked twice as hard as any planter in the Union would dare or wish to work his slaves, and for it had the pleasure of seeing the Boston merchant and the English manufacturer grow rich at their expense. Now the people of that State earn a million a day, and it does not quite all go straight to Boston, and thence to England.

Free trade principles, if fully carried out, would reduce the whole American people, spite of exhaustless resources, to just the position of Massachusetts people fifty years ago, all working at one calling, and all working more for the benefit of middle men than their own. That *plaguey* Indian cotton—the epithet is none too harsh—it makes us feel as if all the bed-bugs in creation were biting, to think of it—came to us by a very round-about course, just as commerce would like to have every thing come, that there may be a great many freights and a heap of profits.

Let us see how it worked. The girl in India that spun and wove it, probably got one cent a yard for her work; the peddler who helped it along to Calcutta may have sold it there for two cents. The Calcutta merchant shipped at four cents, and the London merchant gave it a cant Americanwards at eight cts. The Boston merchant made on it just what he chose; the country merchant ditto, and the hard-working farmer paid fifty cts., and paid in agricultural produce dog cheap. For what the worker at one end got one cent, the worker at the other paid fifty, and half a dozen princely fortunes were being built up by the way.

That is free trade, nothing more nor less; no fancy sketch. It is just what was going on in Massachusetts less than fifty years ago, when the people couldn't earn a million a day, nor keep but the smallest fraction of what they did earn. If the majority want that state of things again, we must have it. The mighty resources of the country can not save us from it. You may shout "free trade" till you are hoarse, but if you will have it you are done for; mineral and agricultural resources never will be developed *profitably* by a nation that spurns manufactures. History has written this with a pen of iron. Theories about its being cheaper to buy than to make are idle nonsense in the presence of such testimony. The nation that pays its gold, or even its agricultural produce to any great extent for foreign manufactures, is doomed in advance, must be poor, however rich her soil or teeming her mines. Agriculture and manufactures, hand in hand, will enrich a state as poor in soil and mines as Massachusetts was fifty years ago, having nothing but ice and granite to export. Agriculture without manufactures, be the soil and mines ever so deep, or mountains of ore piled ever so high, will impoverish. Despise manufactures, let them languish and die among you, depend upon the industry of another country, or another State even, and that moment you give yourself over to a spirit of commerce, that never has treated and never will treat the worker in the soil fairly—a spirit that loves better to *make* money than to *earn* it, and that will be very contented if the Indian girl gets a cent for her cloth, for which the consumer pays 50 cents, provided it can pocket the difference. Our mothers fancied that the Indian cotton was nicer than the homespun linens of their day, because they paid a great deal for it; and we are not yet so much wiser than our ancestors, that we may not do as foolish things.

Let free trade have its way, and such a tornado as now sweeps over the land, cursing city and hamlet, making the poor poorer, and with some hateful exceptions the rich no richer, and destined to fall heavily upon all the true workers, will sweep over us once in ten or twelve years, and in each case the longer it delays, the more withering force will it acquire to expend upon us.

On the other hand, let us have a revenue tariff, fully adequate to the wants of the government, with something to spare for the high purposes of national education and general improvements; let it discriminate slightly in favor of articles which advancing art among us would now enable us to produce with a little protection against half-paid labor abroad; and the sun never yet shown on such a country as ours will be fifty years hence. The history of Masssachusests for the last fifty years will be the history of the whole country for the next fifty, only that the half has not yet been told.

If Massachusetts, with a proper division of labor, from being what she was, has become what she is, what may not States a hundred fold richer in soils, and a thousand times richer in mines, become under the influence of a like system. We have no wish to glorify Massachusetts. She has faults enough, everybody knows. But we would hold her up to the gaze of the nation, in one point of view, and that is her union of manufactures with agriculture. Why, fifty years ago, all Massachusetts out of Boston, that is about half of the State—Boston being at that time the biggest half—could have been bought for four-and-sixpence, but for a childish attachment of the people to their own rocky hill tops and swampy dells. Then the workers could earn little and keep nothing. Now they earn a million a day, one dollar for every man, woman, and child, and keep a part of it. Then it was a blessed State to emigrate from. Now it would not be a bad State to immigrate to. Despite the hardness of the soil, agricultural capital pays as high a per cent., and agricultural labor receives as good a reward in that same little Massachusetts as in any other State in the Union; and from being the worst State, *agriculturally* considered, she is destined in another fifty years to be as good as any other.—Ed.

## Hard Times.

No wonder. We have been importing half of all that we need, and more that we do not need, time out of mind, and the only wonder is that we have had hard times no sooner.

Such a system of governmental encouragement to American labor as James K. Polk commended when seeking the presidency, such as Zachary Taylor approved while on his way to that high office, and such as Henry Clay sighed for to the last day of life—a system by which Americans would pay Americans mostly for what they eat, drink and wear, instead of buying of foreigners, and which, while securing an ample revenue, should incidentally protect such branches of industry as can be about as well prosecuted in this country as any other, but can not be inaugurated solely by private enterprise unaided —would have prevented all this.

Under such a system, every man, woman and child, not too feeble or too proud to work, would have had employment. Nobody would have been out of work; nobody out of money. There would have been to-day more workers and less speculators, fewer merchants and better, and a great many more honest men. It may seem boastful, but it is true nevertheless, that if the doctrines advocated by this Journal from its commencement had been heeded by the nation, there would be no revulsion, no prostration of credit, no loss of confidence—these ten banks failed yesterday, sixteen more gone to-day, all the rest going over, would not have been ringing in our ears, as they are. But, government and people, we have been acting like madmen—have sown the wind and are now reaping the whirlwind—and it is just about good enough for us. If the virtuous, industrious poor, those who have done as much to create our wealth as any others, but have not been *sharp* enough (how we hate the term) to get their part, were not going to suffer, we should hardly care for the rest.

Oh, but here is a rich merchant gone down! "He was worth eight millions." An honest man, who pursues a useful calling intelligently is worth more than eight millions. He is not to be estimated in dollars and cents. But the possession of eight millions, or one million, as the result of a few years' trade, is no certain proof that the holder is a richer man than the rest of us in any decent sense of that term. It comes much nearer proving that he is a greater thief. But here we are in the midst of a mighty crash; and if it turns out that the Shylock over his bags of gold is a god to be sought to in trouble, but sought to in vain, and the merchant who has stimulated our folly by his display of foreign silks and laces is more pitied than the real sufferers, it will be but the old thing over. Our abominably inflated credit system gives the sharpers untold advantages over the honest worker, and if the present crash makes us more cautious of gassy inflations it will not be without its good effects.

The fact is we have bought too much and manufactured too little. It is not true that if we buy a handkerchief for a belle in Broadway at $100, and pay for it in wheat at $1 a bushel, we are no poorer for it. Enough such exchanges would ruin the richest nation on the globe. Much less is it true that if we pay for gewgaws in California gold, we are no poorer for it. We are poorer at least by the amount that the gold diggers would have earned in other employments. If you build a substantial barn, worth $2500, the nation is richer by that sum; but if you were to dig gold the while, and then exchange it for what only gratifies the mawkish folly of wishing to have something which other people as good as yourself can not get, who is the richer for it? or who the better? Nor is it true that if we purchase the real substantials of life and of national wealth and comfort, we are no worse off, even if we pay for them in our own produce. The producers of the two countries are too far from the consumer. They are, it is true, producers and consumers to each other, and so far so good, but are too far apart. Too many freights and quite too many profits are between.

Suppose England should make our ploughs and we should pay her in corn. Would that be good policy? Would the plough-maker get more for his work? Would the corn-grower get more for his corn? or would the intervening freights and profits take something out of both? The latter unquestionably, and it is so with everything. Commerce is necessary only because not all climes produce all that is desirable. It is good only as it promotes necessary exchanges, and is evil whenever it induces unnecessary exchanges, as if the English plough-maker and the American corn-grower should exchange commodities at arms' length instead of each trading with his own neighbors. The interests of both producer and consumer are safer in their own hands, whenever and wherever they can be brought together, than in middle hands. Commerce is always a toll upon the results of labor, paid by the producer, or consumer, or both. When necessary, by reason of the remoteness of these parties, it is to be submitted to as a necessary evil. But the sober matter of fact is, that more than half the so-called commerce of this age, is a made up affair for the benefit of somebody between the producer and the consumer. We not only trade too much with foreign nations, but we trade too much, or rather employ others to trade too much for us, among ourselves. Too many of us are practising to live by buying and selling, and not enough by producing. We prefer a big slice of what others have earned to earning something ourselves, to live by our wits rather than by our energies, to be *sharp* rather than industrious.

Now if the Congress at its next session, will lay aside its party bickerings for once, and consider what is due to the farmers and mechanics of this country in the way of legitimate protection to American industry, it can hardly fail to take a mighty step towards the prevention of such crashes as the present. In perfect consistency with our republican institutions, and with the eternal laws of right and justice between man and man, state and state, section and section, American industry may be fostered instead of being crushed, and we may become an *independent* nation in place of being as now the most dependent, with more wants, real or imaginary, that we can not ourselves supply, than any other people under heaven.

And if Congress will do its duty, let the people do theirs. Let about 500,000 of the runners, drummers, agents of all sorts and sizes, who are steaming people up to buy what they do not need and to sell what they ought not to part with, and swap away what they should keep, go to work. We see more every day, who are teasing for a place, where they can run up and down for a paltry commission, without hardening the inside of their hands, to whom we want to say, "Go into the woods, cut down a tree, hew it into some useful form and do the world some good; or let yourself to a son of Vulcan and learn to be a blacksmith; or to a son of Ceres and learn to be a farmer; or to some other master of an honorable calling, and learn to be independent, instead of hanging upon others for their shillings.

And then, if we can learn to work, it is more likely than not we shall learn not to spend so foolishly for what other nations manufacture. Here in New-York is a merchant (there are thousands such) who is *sharp;* yes, very sharp, sharp as a razor, sharp enough to cut all that come near him; prides himself upon being *shrewd;* shrewd is the term; he is not talented, but shrewd; and he has made a quarter of a million since the last "burst up" before the present. His sons are fast learning to be spendthrifts. His wife and daughters don't work, could'nt make a loaf of bread or a pie, nor order either made without an extra house-keeper to run between them and the Irish girls, who know more than both of them. They know how to sport foreign goods up and down Broadway, and that is about all. So we go—sweep our streets with amazingly expensive brooms, and no wonder there is a crisis, for surely the disease could'nt "get" much worse and the patient live.

Aye, if the government will favor American industry and the people will be industrious, and not senseless spendthrifts, we shall get on better.—Ed.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## "Middle Men."

Messrs. Editors:—I have read Mr. Spencer's article in the October number of the *American Farmers' Magazine*, and your comments thereon. It seems to me a great mistake to attribute the *exploitation* of the producer and the consumer by the merchant to the rascality of individual merchants. The difficulty, I apprehend, will be found inherent in the entire system of exchanges—in the relation which exists between the producer and the exchanger.

Let us inquire a little into this, and try to throw some light upon this darkened subject. To go back for a moment to first principles, I hold it to be an axiom, self-evident, needing no proof, that labor is the only legitimate source of wealth. Whoever produces, is entitled to the product; this right of course carries with it certain duties, which we all recognize, but which it does not come within the scope of my present purpose to discuss.

But the fact is that the accumulations of wealth constituting capital are found, not in the hands of the producer, but in those of a class called by various names, merchant, banker, speculator, etc., who devote themselves to the business of *accumulating* the wealth produced by others. These accumulators generally act, directly or indirectly, as distributors and exchangers of products, and contrive while so doing to retain in their possession a very considerable part of the articles exchanged. This per centage of other people's property which they are thus enabled to obtain, is called their PROFITS, and under the disguise of that little word all the wrong is effected. How do they make their profits? By buying cheap and selling dear, by thus getting a real for a fictitious value. And just so long as the producer SELLS his products to the merchant, just so long will the evil continue. It is necessary that there should be some mediation between the producer and the consumer, since society is too complicated to make it possible or desirable that the farmer should make his own tools, houses, clothing, and other necessaries or luxuries, or that he should directly exchange his products himself. For performing the labor required in making these exchanges the exchanger should receive a just and liberal compensation and no more. He should act as the *servant* of the producer and the consumer, exchanging for their benefit the goods of one for an equal cost of the goods of another, but not buying on his own account or owning any of the goods he exchanges. As certainly as the trader *buys* and *owns* the goods he will manage to get more than a fair compensation for his labor.

This business of PROFITS, that is, of gambling, or getting something for nothing, also leads to the evil of ten men being employed in making exchanges where one or two would be ample to do all the necessary work. If there were no *profits* to be made, only compensation to be received for *labor*, no more would be anxious to go into that business than could find actual work needed to be done.

Whereas now, the producer has to support at least five (more likely ten) times as many exchangers and spoliators as would be necessary for the transaction of the business, who rush into it hoping to accumulate wealth without producing it, or to live better than their neighbors with less labor. Brain work is honorable and entitled to fair pay when usefully directed, as for example, to secure the proper adaptation of supply to demand for the good of all; but brain work directed simply to making PROFITS is not honorable.

If farmers then wish to enjoy the results of their labors, they should employ exchangers to sell their products for their benefit. They should not undertake to sell their own goods to a "middle man," who in turn is to sell them for his benefit at the largest advance he can get, and who, devoting his whole energies to the business of buying and selling, is sure to be more than a match in sharpness for the farmer.

I know it is not easy to effect a complete and thorough reform in the whole system of trade—it is not possible to do it at once. In the first place farmers must take the pains to study the relations of man to man, must endeavor to ascertain what constitutes equity in exchanges, then the first step will be taken toward practically realizing justice. I know the difficulty of finding those who love equity enough to be willing to act for the producer, without trying to spoliate him, and who are both capable and honest; but there are those. The demand will never be long without the supply; that is a law of God. I have only given hints where volumes may be, and have been written, but if it leads any to search for the law of justice or equity between man and man, I shall be satisfied. F. S. CABOT.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Manures, and their General Application.

THE present is the season when farmers in general, and good farmers in particular, scrape up and remove all manures, and give them immediate application in top-dressing, or pile it for future use. How far either of the above ways of disposing of it, are pursued with the strict economy of good husbandry, we shall not attempt to decide. Our object, just now, is to tell of a course we have for several years adopted, and which we have found productive of very good results.

Our manure for next year's corn crop.—This is made up of such as remained and accumulated in the barn-yard through the summer, and is composed of the droppings of the animals and such other material as comes to hand for the purpose. We draw it to the ground where it is to be used the following year in September, and make it into a pile as nearly conical as possible. The object of this is, to keep it compact, and in a shape to shed rain, an object we consider as important in a manure-stack as in a hay-stack. In building our manure heap we have plaster at hand, and every three or four loads, (cords) we spread a coat of plaster over the whole, and when the stack is finished we give it a covering of plaster of the eighth of an inch in thickness, and here we leave it until spring, to find it in a beautiful condition at planting time, for putting under the hill.

For top-dressing meadows, we spread the same kinds of manure evenly upon the surface, as near as we can before the fall rains, at the rate of four or five cords per acre. We then give a coat of plaster at the rate of fifty pounds (it looks small in quantity) per acre, in this case the two ingredients act together, are actually worth more than double the quantity of either would be if used separate.

The foregoing system of preparing and applying manures we have found to be a decided improvement. We believe it is generally admitted that the action of plaster (gypsum) is greatest on newly stocked or recently manured lands. This being so, the more the manure and plaster are incorporated the more each will help the other, and the greater benefits will result. When they are spread and sown on grass lands at the same time, then their action must be in close connection, and if put on when the rains of autumn come into their aid their effect will be early and strongly marked in the coming spring.

We might carry our experience one step further. When manures are to be applied as top-dressings, on grass lands, the quantity may be greatly increased without any material diminution of quality, by composting muck, or indeed almost any absorbent soil in the proportion of one half. Indeed, we have top-dressed by simply taking earth from the way-side, often removing the thin sod, and spreading it over meadow, in the same proportion we would other manures. If its fertilizing properties were not so great as guano, it possessed this quality, —it covered the exposed roots of grass and furnished them soil in which to throw new fibres and of course contributed to a more abundant future growth. Where manures are scarce, it is certainly worth trying. Yours truly, WM. BACON.

RICHMOND Oct. 4, 1857.

## Improvement of Land by Drainage.

IN every State in the Union are larger or smaller extents of land, unfit for cultivation and injurious to health by reason of stagnant water. Since 1849 the general government has ceded to the States some 50,000,000 of acres of swamp-land, with the idea that the States in which these lands lie might devise means for their reclamation to agricultural purposes, or at least take measures to abate their evil influences on the health of the people.

Over the whole Union, on the sea-coast, along the margin of rivers, on the steps of hill-sides, in mountain glens, in valleys and on flats, there are wet lands, useless for agriculture and injurious to health, which are destined, beyond all question, to be reclaimed and to become the most productive and the most beautiful and healthy portions of the country. In this view the subject of drainage becomes one of great and general interest—of great interest because of the vast amount, productiveness and wealth involved, and of general interest, because nearly every land-holder has, *directly*, a work to do and a benefit to receive in this line, while, indirectly, all are to be benefitted by the increased productiveness and healthfulness of the country.

Lands requiring drainage may be divided into uplands and swamps, calling those uplands, without reference to actual height, whose surface is free of water, and those swamps whose surface is inundated a considerable part or the whole of the year. In this view of the subject we find uplands on the very sea-shore and swamp lands on mountain tops. When uplands require draining it is generally owing to an impervious subsoil alone, there being no want of an outfall for the water, nor higher lands around to prevent passing off freely.

*On the drainage of uplands* we propose to speak now, and on the reclamation of swamps at another time. But does upland require drainage? On this point we quote from the report of the committee on draining of the New-York State Agricultural Society for 1848. They say: "There is not one farm in seventy-five, in this State, but needs draining—yes, much draining—to bring it into high cultivation." They say further, "It will be conceded that no farmer ever raised a good crop of grain on wet ground, or on a field where pools of water become masses of ice in winter." The late Mr. Delafield said, "No man ever raised good wheat from a wet or moist subsoil." On land not prepared by underdraining, farming becomes too much a matter of chance, a sort of lottery in which you draw a prize if the season is just right for your land, but a blank if it is not; whereas if, instead of waiting for a season right for your land, you make your land right for any season, by plowing to a good depth and underdraining where necessary, then there are no blanks in the case. Every year returns you a crop, and farming becomes a matter, not of chance, but of calculation.

It is now as settled a point that *depth* of pulverized soil, so underdrained by nature or art, that no water will remain stagnant in it, is a security against injury from severe drouths, as that it is a guarantee against the bad influence of excessive rains. One foot of pulverized soil on a porous subsoil, whether the subsoil be such by nature or be made such by drainage, is as good an insurance against injury, to any great extent, from too much or too little rain, as any farmer ought to ask. If the subsoil is naturally so porous that no water will stand in it—a point easily decided by digging three or four feet after a long rain—then the farmer has nothing to do but to mellow the surface for a foot in depth and to enrich it properly, to be more certain of a crop, be the season what it may, than we ever are that the banks, which give us their promises to pay, will redeem them; and farming becomes the surest business in which capital and labor can be invested. But if the subsoil, owing to clay, rock, or hard-pan, be impervious to water, it is just as unwise to keep on trying to cultivate it, without first preparing it for cultivation, as it would be to mow all day with a dull scythe, instead of first grinding it in the morning, and then grinding it as often as necessary through the day. Why grind the scythe? Is there not labor enough without this? Yes, but if you add the labor of grinding, your labor will avail you more as a whole. And just so it is with the labor of under-draining. If the subsoil is impervious the labor of under-draining, added to that of cultivating, will be more surely and better paid, as a whole, than that of cultivating without under-draining.

Under-draining *deepens the soil*, greatly increasing the amount of vegetable food that is made available to plants. It *allows of a more thorough pulverization*, thereby increasing the amount of soil with which the roots will come into contact. It *allows the water to circulate more freely*, to sink readily, and to be drawn upward again by capillary attraction as evaporation from the surface goes on, thus charging it with the soluble matters in the soil, to be brought to the roots by it, as plant food. It *prevents surface washing*, and thereby retains in the soil plant food that would otherwise be carried off, and preserves the field from being gullied into rude, unseemly forms. Streams of water should never be seen running from the barn-yard; because they carry off the strength of the manure; and for a like reason they should not be seen running from a richly-cultivated field. They dissolve and carry away the strength of the surface soil. It *lengthens the season*, making the ground warm earlier, keeping it warm all summer, forwarding the crops, and delaying in some small degree the autumn frosts, or if not actually delaying them, at least making them later relatively with the ripening of the crops. It *prevents freezing out* in winter, *warms the soil* in spring and summer, and *makes the crops earlier* out of the way of frost in autumn. Every one of these assertions could be backed up by sound, philosophical reasoning, if there were space; and what is more, every one of them, without exception, is sustained by the oft-related experience of the very best farmers in this and other countries.

But supposing that all who are not hopelessly behind the times are now convinced of the benefits of under-draining, let us inquire after the best means, confining ourselves for the present to uplands, and leaving the reclamation of swamps for another occasion.

A stone drain, sides eight inches apart, with flat stones over them, making a culvert of about eight inches square, and then covered several inches deep with small stones, and filled above with earth, is a pretty good drain, and will operate well for a long time, provided the bottom be brought to a perfect grade before laying it, and provided also that no vermin be allowed to burrow about it and expose it to sudden gushes of water. But there are too many provisos and too many uncertainties for so expensive a drain—the most expensive, we believe, that has ever yet been proposed. It is one which we would recommend only in a case where there are round and flat stones in abundance for the culvert and pebbles for the filling up, all within a *stone's* throw of the ditch. This is an expensive drain for two reasons: 1. In order to lay it well the ditch has to be very wide, quite to the bottom, nearly doubling the labor of excavation above that of excavating for a tile drain. 2. The handling of such an amount of stones is expressive of labor. We would never resort to this mode of constructing a drain, unless we were willing to charge about all the labor of handling the stones to surface improvements in the immediate neighborhood of the drain. The carrying of so many stones a considerable distance would be hardly better policy than "carrying coals to Newcastle."

A pretty good drain is constructed by digging from three to four feet deep, filling up two feet with small stones, dumped in from the cart at random, and then covering with straw, bark, shavings, or salt hay, and filling to the surface with earth. Where a good fall can be obtained, and the adjacent grounds are full of pebbles to be got rid of at almost any expense of labor, it might be recommended. We would prefer this drain, on the whole, as costing less, and if rightly done, quite as reliable. The stones should be small, only from the size of a hen's egg to that of an ostrich, larger ones, if any, to be broken. In this case the ditch may be narrower. Six inches at the bottom would do well. Care should be taken so to even the stones that the earth will not fall in around them, and the bottom of the drain, previously to filling in with stones, should be brought very nearly to a regular grade, with a uniform descent from the upper end to the outfall. Indeed no drain which has not a very nearly uniform descent, can be relied upon to carry water long; for the steep runs will be very sure to lodge obstructions in those less steep, till the whole becomes ineffective.

Brush drains are better than nothing, and pretty effective and durable if made in the best manner, and may be recommended where there are no stones to be disposed of, and the tiles can not be obtained without great expense for transportation. If resorted to, the butts of the brush should be laid upward, the work to be commenced at the outfall, after the manner of shingling, from the eaves upward, each bush drawn in a little as compared with the last, till the whole is finished, the ditch to be nearly filled, as they would settle on being covered with earth, to allow room for the plow above them.

Filling with poles laid parallel with each other; with rails, two laid a little apart, and a wide one over them, or if rail timber is so plenty as to be worth but little, six or eight rails thrown in at random and covered with earth, makes a tolerably good drain. We have seen such working well after many years, and we have often heard of their answering a good purpose for a quarter of a century or more, but we could not recommend them. It is manifest that a drain constructed of wood, in any form, whether of brush, poles, or split timber, would be more durable in cold grass-lands than in cultivated fields, because in the latter the air penetrates more freely, the soil becomes warmer, and the brush or timber would decay sooner. But we doubt whether it is good policy to construct such drains in any soil, unless where timber is a drug, stones scarce, and tiles can not be transported without great expense, and even then the farmer might be led to inquire whether he might not better procure a machine and make his own tiles.

Three strips of board, say four inches wide, nailed together in a triangular form, the ends fastened by nailing to a shorter strip, so as to be kept firmly in place, that the ends might match perfectly, would carry water well for a while, and if laid deeply in a cold soil would last many years. But we should think that there are few sections where true policy would permit the construction of such drains. "Circumstances," we know, "alter cases;" and every man is the best judge of the circumstances in his own case.

Where circumstances peculiar to a location, such as abundance of round and flat stones, that want to be sunk into a culvert drain to get rid of them; of pebble stones to be disposed of in a cheap way, as in a filled-in stone drain; of brush at hand, already cut, or to be cut in order to clear the land of them; or of timber so plenty as to be of little account—with these and perhaps some other exceptions, which may now escape us—the best way is, beyond all controversy, to lay the best tile drains, and in the long run it is the cheapest and pays best to lay them in the best possible manner. Let the excavations be from 3 to 4 feet deep, and if you set your own judgment at work, instead of waiting for some one to tell empyrically, to an inch, how deep to go, we think your drains will turn up nearer 4 than 3 feet; or if you bring the bottom to nearly an exact grade, which we would urge, because we believe an uneven grade, now steep and then nearly level, to be the bane of all draining, it will happen that your drains will vary all the way from three to four feet, and in quite uneven surfaces, perhaps in some extreme points two and a half to five feet.

The sole tile is the best; that is, the tile which has the bottom or sole attached, moulded in one piece. Some have used collars. The collar is but a short piece of a larger tile, say 4 inches long when the tile itself is about 13 inches, so made that the ends of two tiles, at the place of joining, slide into the collar, and are held by it exactly end to end, so as not to be liable to be displaced in covering, or ever after to get out of place, by any possible heaving of the ground. In laying the tiles, even if collars are used, and especially if they are not, be careful to make them firm in their places, the ground under them to be made equally hard, so that one will not settle more than another, which can be effected with certainty only by making all so firm as not to settle at all. Too much care can not be given to the attainment of a regular descent, or rather ascent, as you will begin to lay them at the lower and not the upper end. *Laterally*, a line of tiles may curve, if the nature of the ground requires it. You might even run your drain in a semi-circle, especially if the collars be used, provided the shape of the field demanded it, which, however, would rarely if ever happen, it being quite attainable, in most cases, to make the drains perfectly straight, and this being decidedly the best way when practicable. We only say, that *laterally* you may give the drain a gentle curve, without serious injury if you regard that as desirable, but let them be straight, unless your ground presents a special reason for the curve. *Vertically*, the drain should not curve, but should descend by a regular gradation, whenever the face of the ground will permit.

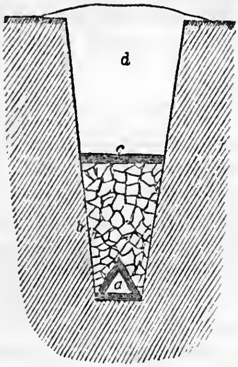
With regard to distance of drains from each other, much depends upon the character of the soil and more on the depth. In a very clayey, tenacious soil, through which water passes with the greatest difficulty, they need to be near each other. Twenty feet in extreme cases would be far enough; and if the ground is to be cultivated in the highest manner, as in some branches of gardening it might be wise to put them but one rod. On soil but ordinarily impervious to water, depth takes the place of nearness, so that whether you lay the drains 2 feet deep and 33 feet apart, or 4 feet deep and 66 feet apart, nearly the same object is gained, a little more speedily perhaps by the first, but we think more durably and at less expense by the second.

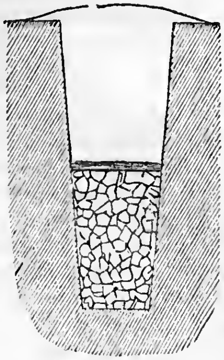
Not only does a deep drain extend its influence more widely, but its cost we think must be less in proportion to the breadth of land affected by it. The deeper a drain the less likely is it to be made ineffective by the insinuation of roots, a fruitful cause of failure with shallow drains. We have seen tiles that had lain but two and a half feet deep, so completely filled with grass roots for rods, that very little if any water could be passed through them. It is true, also, we believe, that the deeper a drain is the less the danger of its being stopped by sediment, because in this case the water is more perfectly filtrated before reaching it. We incline, therefore, to the opinion that *few drains and deep* is the best policy, but no certain rules can be laid down. The man who is about to expend money in draining should study the subject in the light of all the experience and observation he can summon; should call in the advice if possible of those who know more than he of the subject; and after all should leave a wide margin for the exercise of his own judgment, acquainted as he is, better probably than any one else, with the nature, tendencies, and wants of his own soil.

As regards the size of drain tiles, something depends upon the length of the lines, those which are longer having to carry more water towards the lower end. We see that the sizes advertised by James M. Crafts, of Whately, Mass., by whom excellent tiles are made, are two inch, three inch, and four inch calibre. The two inch are sold at $12 per 1000 pieces, about 13 inches long; the three inch at $10 per 1000; and the four inch at $10 per 1000. Rarely, however, do the main drains require so large a calibre as four inches; and for all ordinary cases, the run not being unreasonably long, a two-inch calibre is quite as good for the secondary drains as larger. A one-inch calibre will carry a large amount of water by constant running. A two-inch calibre will carry just four times as much, allowing nothing for difference in friction or retardation of water by the sides of the pipe; and after making due allowance for friction, and considering that the friction is less the larger the pipe, it is probable that a two-inch calibre would carry six or eight times more water with a moderate fall, say one inch to the rod, than a one-inch calibre.

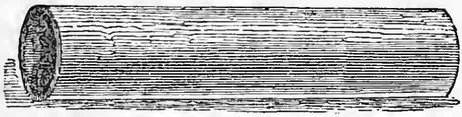
It is not uncommon to lay tiles with a fall of but half an inch to the rod; and they have been known to work well with even less fall than this; but a greater fall is desirable, and there is room for the exercise of much judgment in so laying out the plan of operations as to secure a considerable, and as far as may be, a uniform fall for each drain.

The first of the cuts below exhibits the section of a drain, such as we have described, with the exception that the culvert is differently formed. Perhaps the mode here shown is the best, where stones of precisely the right quality are at hand. The second represents a filled-in stone drain. Such a drain, if three feet deep, and filled a foot and a half with small stones, well covered to prevent the earth falling in, could hardly fail to do good service, and is not very expensive if half or three-fourths of the filling in be charged to improvement of land in the vicinity. The third, fourth and fifth cuts sufficiently explain themselves.

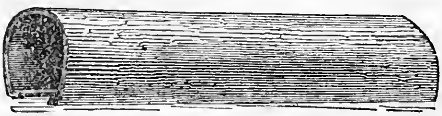


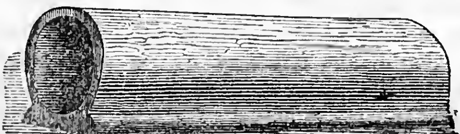
TUBULAR TILE.



HORSE SHOE TILE.



SOLE TILE.



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## Mules at the St. Louis Fair.

The exhibition of mules at the St. Louis Fair was said to have been the finest ever seen in this country. A Mr. Adams, of Clay county, Missouri, bore off ten premiums of the aggregate value of $250. His matched mules, four years old, were elephantine fellows—seventeen hands high, of remarkable breadth, with the finest of shoulders and hind quarters, as symmetrically formed as a fine horse, easy trotters, docile, and worth any fancy price their owner might place upon them. Under the class of saddle mules, Mr. Adams exhibited a beautiful animal, nearly black, having three gaits, to which he was well broken, a trot, pace and canter. In size, he was less of a mammoth than the others, but large enough, and well suited to the saddle or buggy, quick in his motions, graceful and perfectly manageable. Mr. A. exhibited him in a buggy, showing a square speedy trot, that would roll a buggy along at the rate of ten miles per hour.—*Prairie Farmer.*

## Manure Water.

Manure water is a great assistance, judiciously applied, to plants in pots, particularly to increase the size and coloring of flowers, if given when the flower buds are swelling, and before they expand. An excellent manure water for this purpose is made by mixing one ounce of guano and two ounces of superphosphate of lime in four gallons of water, previously stirring it well, and use it when it has become clear. This is quite strong enough, and should be given alternately, with waterings of pure water.—*Me. Farmer.*

This is all very well; and it is well enough to have some guano and superphosphate for such uses always on hand; but as few have them, or care to go to a dealer for a few pounds, we venture to say that four shovelfuls of well-rotted manure from the various animals of the farm, including the hens, thrown into a barrel of water, to stand a few days in the sun, and to be occasionally stirred, will give a manure water equally good—one that will make a potato hill grow as luxuriantly, the fruit on a dwarf pear ripen as luxuriously, or the rose blush as sweetly.

In a shovelful from each of the various sources of fertility about the farm-house, as the yard, stables, pig-pen, and hen-house, mixed together and fermented, or if they be taken in only a partially decaying state, are all the elements found in guano and superphosphate, and they are sufficiently soluble for the above purpose.

There is not a farm-house—scarcely a house of any kind—in the country, where we could not find decomposing matters, on the shortest notice, that would be valued by the occupant at one cent or less, which would make a barrel of manure water, just as good as that recommended above.

It is true that a homœopathic dose of guano or superphosphate, especially the former, and perhaps both better than either alone, will give a wonderful richness to the colors of flowers. But they are not the only things that will do it.

It would be well for us not to forget that there are manures otherwhere than in the merchant's back-room.—Ed.

## A Sugar Mill for the People.

Two weeks ago, we stated in the Local Department of our paper, that we had been informed by certain iron-founders of New-Jersey, that they had constructed a sugar-mill, which they would have in operation at the Burlington County Fair on the 6th and 7th inst.; that it was our intention to be present at the Fair, and that we would examine the mill and report our opinion of its merits. We were there the first day of the Exhibition, and saw the mill in operation; the juice in process of conversion into molasses; and tasted the manufactured article. *It was a success throughout.* The mill seemed to us to be exactly what every good farmer needs—for we believe that every good farmer will speedily go into the cultivation of this cane to supply his own family with both molasses and sugar. It is a very simple and substantial piece of machinery, and apparently it is impossible to get out of order with anything like fair usage. The canes pass between three iron rollers, put in operation by a sweep similar to that used in old-fashioned cider mills. About ten canes are crushed at a time, producing about one gallon of juice per minute. The juice falls through strainers into a receiving vessel. The driving of the mill is quite easy work for one horse; and the feeding of it is mere play for a small boy. The juice was most thoroughly crushed out. The cost of the mill is $125, and we feel very sure that a better article for the money can not be obtained or would be desirable at this time. Half a dozen farmers might join in the purchase of one.

The makers of this mill—we feel it our duty to announce, for the benefit of farmers—are Risdon & Son, of Mount Holly, N. J.; and we presume that any order for the mills will be promptly filled in time for the present crop. But not a day is to be lost in securing the canes from the frost, and converting the juice into molasses, if advantage is to be taken of the canes still standing.—*Germantown Telegraph.*

## Indian Corn.

Maize, or Indian corn, originated in America, and is not yet, we think, cultivated to any extent on the European continent. Though the people of Great Britain can not be made to appreciate its merits very fully, the aggregate exports of corn in 1856, in the form of whole grain, meal, corn starch, farina, etc., amounted to between seven and eight million dollars, or about one-fortieth of the whole exports of the country, and 6,700,000 bushels, considerably more than half, went to England alone. Corn has always been an important article in this country, both of consumption and export. The total amount of this produce exported in 1770 was 578,349 bushels; in 1791, 2,064,936 bushels of which 351,695 were Indian meal. The value of corn and its manufacture exported from the United States in 1830, was $597,119; in 1835, $1,217,665; in 1840, $1,043,516; in 1845, $1,053,292; in 1850, $4,652,804. The export increases more rapidly than the production. The export of corn quadrupled between 1840 and 1850, while the production did not quite double. The great amount of invention bestowed on corn-planters, corn-cutters, shellers, cob-grinders, etc., tends each year to promote the increase of production. It has been estimated that as a general rule, seven pounds of corn will produce one pound of pork; so that in localities where, through distance from market or from transportation facilities, the cereal can not be raised at profit for sale, it is frequently the material used in fattening the more concentrated form of diet, and on which, consequently, the freight is less. Cob meal, we believe, is most valuble for animals that chew the cud; horses and hogs, as a general thing, deriving less benefit from the cob-grinding invention. With all animals, however, we believe, there is a perceptible advantage realized by mixing the cob with the denser meal.—*Scientific Amer.*

## Fattening Properties of Peas and Beans.

These articles have been found by chemical analyses rich in nitrogen. The inference has been that they would be specially useful in supporting the waste of the muscles of animals, and it has been suggested that they would be particularly useful in the production of wool. They are evidently valuable for these purposes, but not the less valuable for the production of fat. Those persons who have used peas for fattening hogs, consider them worth as much as Indian corn. In districts where that grain is not grown, very fine pork is produced from peas. Dickson, in his work "On the Breeding of Live Stock," states that a sweep-stakes was entered into between five East Lothian farmers, to be claimed by the one who should be pronounced the best feeder of cattle. Forty cattle of the same breed, and in equal condition, were divided equally among them, as fairly as possible. They were put up together the second week in September, and killed at Christmas following. The winner of the stakes fed his animals wholly on boiled beans with hay.—*Exchange.*

## Mouldy Peas, Beans, Grain.

The generation of mould in peas, beans, and grain, when put into granery in a somewhat moist or humid state, is with difficulty prevented. When this evil occurs the legumes or cereals affected are supposed to be rendered utterly worthless thereby; but such is not the fact. Peas or beans, corn or wheat, that has become mouldy, may be perfectly deprived of its unpleasant smell and taste by immersing it in hot or boiling water and permitting it to remain therein till the liquid becomes quite cool. If one immersion does not prove effectual let it be repeated. Animals devour mouldy grain when managed in this way as greedily as any, and are apparently as much benefited by it. Peas constitute an excellent feed for swine; and few articles are more strengthening to sheep than beans. They should be given before and after casting their lambs, with a small quantity of chopped turnips—say about two quarts per day—one quart in the morning and one quart at night. This will generally be sufficient, and will tend to promote the action of the lacteous system, and procure a copious flow of milk, besides proving highly promotive of the general health of the system—*Germantown Telegraph.*

## Privy Manure for Corn.

A gentleman manured one-third of a corn plat with guano, one-third with barn manure, in which the urine had been saved, and one-third with privy manure, in which swamp muck had been mixed as an absorbent. While the corn was growing, that which had been treated with guano seemed the most luxuriant, but on harvesting it, the section manured from the privy produced the most corn, both in the ear, and in shelled corn, by weight.—*Maine Farmer.*

## How to Increase Manure.

If you have not hitherto done so, permit us now to prevail on you to take this advice: Have as many loads of rough materials hauled and spread over your cow-yard as will make twelve inches in depth. In spreading, so fashion the materials as to be basin shaped, the lowest point being in the center to prevent the escape of the urine. While the rough materials are being placed in and spread on the yard, dust each layer so spread, with plaster, or with pulverized charcoal, and when completed, dust the surface with either of the substances named; then roll the yard to consolidate its contents—the heavier the roller the better. Occasionally throughout the yarding season spread plaster over the yard, and from time to time add rough materials.—*American Farmer.*

## History of Fine Wool Sheep.

[CONCLUDED FROM OUR LAST.]

The English farmer said at once: "I can do nothing with these little sheep; I may get two or three dollars for the wool, but I can get ten dollars for the carcase of the mutton sheep, if I loose all else. Besides, these little sheep can not live in the fields in the winter. They are not stout enough to endure that. I must have the large sheep for the mutton I can get out of it, and because it will live on the fields in the winter and enrich my land, so that it will yield twenty two bushels of wheat to the acre." That is the average in England; our average is not fourteen. Do you wonder, Mr. President, why they would not introduce and adopt the merino breed of sheep in England? You can see at once why it was so. After the utmost exertions, for some thirty years, in trying to do this, and succeeding not at all, finally the royal flock of fine wool sheep was sold at auction. I have seen the account of those sales in the Library of Congress, showing to whom each sheep was sold, and how much it was sold for.

While this business was going on in England with this want of success, in Saxony they had attended to that family of sheep which came to the Elector of Saxony, and had bred in entirely with regard to the fineness of the wool. They had shepherded them on the fields and plains of Germany, and bred them in fine, by selecting the finest all the time, without regard to size. The result was, they got a delicate, small, tender sheep, called the Saxony sheep, which is all over the regions I have mentioned.

The gentleman who bid off, in 1817, I think, the greater part of the royal flock that was sold in England, was a captain in the British Navy. His name I do not remember; I think it was Mitchell, or some common name of that kind. He went, about the same time, to Saxony, and bought a larger flock of the Saxony breed, and carried them both to Australia.

That is now the family of Australian sheep; their wool is a fine silky wool. It has been produced by crossing the breeds from England and Saxony.

Now, how came these in our country? Mr. Livingston, who was our Minister to France in the latter part of the reign of Louis XVI., got a few sheep from the Rambouillet flock in France, and carried them to New-Rochelle, in New-York. Colonel Humphries, of Connecticut, was our Minister to Spain at that time, and he got a few sheep as a present from the King of Spain. They were taken to Connecticut; but they never amounted to much.

About 1810, at Bonaparte's second invasion of Spain, when he had possession of the Prince of Peace, and endeavored to reëstablish Joseph Bonaparte on the Spanish throne, the Cortes ordered the sale of the royal flocks, for the purpose of raising money to defend the nation, giving to the purchasers the right to carry them out of the kingdom. William Jarvis who is still living in Vermont, was then our consul at Lisbon. Seeing this advertisement, he went into Estramadura, and at that auction bid off eleven hundred of the sheep. He sent them to this country—to Baltimore, Philadelphia, New-York and Boston—reserving a flock to himself, as he was about to return home. He returned with his flock to his farm in Vermont, where he now resides, and where he has kept that family of sheep to this day. He has shearings of each year from that time to this, marked with the dates, so that you can compare them, and see whether the wool is improving or deteriorating. There is a decided improvement. It is a great deal better than when he brought the sheep from Spain. His importation was the basis of the merino sheep of this country. I well remember that soon after the close of the last war with Great Britain, in which we suffered so much for the want of woolens, some of these sheep, a year or two old, sold for $400 a piece. I have seen a little merino sheep, that a man could carry under his arm, sold for $400. They were thus introduced into New-England, and they have gradually spread off into Pennsylvania, New-York, Ohio, and so on West. As late as 1826, after we had entered upon the protective system in relation to woolens, and especially after the act of 1828, our people went to Saxony and obtained some of the Saxony flock as a finer wool sheep. Considerable numbers of them were imported in those two years; but they did not answer our purpose at the north. They were too feeble; they were not stout enough for our climate; they did not winter well; but they have done pretty well in some parts of the country—I have particularly on my mind Washington county, in Pennsylvania, where they are producing Saxony wool of high quality. In Ohio they have crossed the Saxony with our eastern merinos; and a large part of the wool of northern Ohio now is of as high grade as the full blood merino, and perhaps a grade beyond that and Saxony together.

I have thus, Mr. President, attempted to show, in a brief, summary manner, that fine wool is all the produce of a single family of sheep. Whatever difference there is in its quality depends on the care, and the breeding, and somewhat slightly on the climate and feeding. In Saxony their flocks are driven under shelter in hot days of summer.

There are sheds for them to protect them from the heat of the sun. That care is not taken in this country; perhaps they do not need it here. In Australia the wool made from the English and Saxony merino sheep is a fine and rather longer wool than ours. It is silk. Some few of these sheep have been taken to Brazil and Chili, and there crossed with the native sheep, producing a rather better quality of wool, but still a coarse wool. The great body of the long wool, which is combing wool, for the making of worsteds, is English wool. The coarser wools, which we use for bocking, carpets, blankets, and coarse articles, are the Smyrna and Rio Janeiro wools. The wools cited in your commerce and navigation reports as Smyrna wool comes from Asia Minor; and the wool quoted as Buenos Ayres is from Rio Janeiro and other parts of South America.

## The Steam Plough.

The whole world seems waking up to the importance of the successful introduction of the Steam Plough. At the present time it would be particularly fortunate for the whole country. A great many are looking for a wide-spread revulsion in the monetary affairs of the country, consequent upon the immense speculations in Western lands. Whether such a revulsion will occur or not, depends upon the ability of the country to occupy and make productive these lately purchased lands. The amount of labor applicable for this purpose is limited. But if the Steam Plough can be invented, that shall go over twenty acres a day, *and do the work well*, which we believe will yet be done; then the manual and horse labor that can be procured, coupled with the new invention, will be made to occupy and render productive twice the quantity of land that could otherwise be done.

Mr. Bronson Murray, of Illinois, has offered a reward of $50,000 for the best practical Steam Plough. And we presume that Mr. Murray, in doing this, does not lay claim to any great liberality or public spirit, for the patent right of *such a plough* would probably be worth *half a million of dollars.* In offering, therefore, such a reward, it simply shows that Mr. Murray, (living among the prairies,) can appreciate the immense demand there would be for such a plough, when once practically and satisfactorily tested. The inventive mind of the nation is now busy at work, and we hope soon to be able to announce a satisfactory solution to the problem proposed.—*Ohio Valley Farmer.*

## Bones as a Manure.

A late number of the *Country Gentleman* has an elaborate article by Levi Bartlett, of New-Hampshire, on bone manure. He concludes that there is no other manure whose effects are so lasting as an application of ground bones. Besides the increase of crops, he says it supplies phosphate, which the grasses generally lack, on old and long grazed fields in New-England, and the want of which, cause what is called "bone disease" in cattle. Mr. B. recommends that the bones be pounded, and thus broken to pieces, boiled or ground, and then spread evenly over the soil, and mixed with it. He has a field that was thus dressed years ago, and the effect is yet perceptible on clover.

## Spirit of the Agricultural Press.

Of a recent trip among the farmers of New-Hampshire, the editor of the *Country Gentleman* says, among many other good things:

"In the vicinity of the manufacturing places, many farmers are in the practice of selling large quantities of hay, yet these farms are annually improving, without the purchase of manures to any great extent. The muck beds, barn cellars, the tying up of their cows and some other of their stock in hovels the year round, and skill in collecting other materials for enriching their grounds, solves all mystery in this matter."

On the cultivation of the grape for the purpose of manufacturing domestic wines, he has the following remarks:

"At many farm-houses we were treated with domestic wines, generally that made from currants, and in most instances the wine was of superior quality. At one farm-house we partook of some superior grape wine, manufactured from the domestic grape—the worthy old farmer assuring us that it was the pure juice of the grape, having neither strychnine or any other poisonous ingredient in its composition. We think it would be well for farmers, generally, to cultivate more extensively the currant and the grape, for the manufacture of domestic wines for family use."

As to whether it is twelve or fourteen degrees below zero, irrespective of other circumstances, that kills peach trees, we find the following, a poser, we should think, to those who ascribe the winter-killing of peach trees simply to cold:

"In most parts of this State, the mercury, the past winter, sunk from 30° to below the freezing point of mercury, and yet the peach buds in many localities survived, and we have freely partaken of New-Hampshire peaches the past week."

The editor of the *Germantown Telegraph*, on Horse-Racing at Agricultural Fairs, after admitting the necessity of a reform, has the following, as we think, very sensible remarks:

"But may they not go a little too far, and destroy this important feature of these occasions? The horse is the noblest and most valuable animal owned by man; and the farmer should be the last of mankind to strike a blow at the position which it must always hold in the interests which he represents, and the sympathies and affections of his heart. What ever is done in the premises, ought to be well considered by practical men—those who cultivate the soil, and would, naturally, promote the respectability and benefits of agriculture and agricultural exhibitions. We think there can be no solid objection to the trial of the speed of a horse upon a ring, which should never be *more* than one-fourth of a mile in circumference, inasmuch as the action and general movements, and, we may add, hardihood, or bottom of a horse, can in no wise be judged of better than from such a display.

But *matches*—that is, the trial of the speed of more than one horse at a time—are what produce all the mischief, and cause all the complaint. These we have been always opposed to; and if our advice had been taken in due season, there would have been no reason for the hostility of our local society *to the horse track*, at the present time. The idea that an exhibition of "steam culture" would be of more importance to this community, at our annual shows, than the proper display of horses, is one that may be cultivated by intensely philosophical minds, but it will cause only a broad grin among the farmers of Pennsylvania. No, gentlemen, reform, not destroy, the manner of exhibiting horses, or you will speedily put an effectual damper upon the success of any future exhibition which our good, time-honored, beloved but neglected society may attempt to hold."

"Reform, not destroy," says the editor of the *Telegraph*, and so say we. No man can be more opposed than we are to changing the fair grounds from delightful gathering places for honest farmers, into rendezvous for all the impudent jockeys in creation, and yet we would not exclude that noblest of all animals, the horse, nor would we exclude the man who inaugurates improvements in our horse flesh, from a participation in the funds of our agricultural societies. "Reform, not destroy," is the word.

The *California State Journal* tells us of a new cereal, but does not know its name. Probably it will turn out to be Sorghum Cereale, Imphee Ædibile, or something as strange to our ears. It gives the following description:

A New Cereal.—We saw, a few days since, a specimen of a new cereal, grown in this county. We could not get a description of the stalk, or an account of its origin, and, with nothing to guide us beside the ripened grain, we could not class. It appeared to be the fruit of a rank grass, stronger and larger than wheat, but more light and fragile than Indian corn. The ear or cluster of grains, formed on the summit of the stalk, was about three and a half inches in length, about four inches in circumference, and of an irregular, oblong shape. The grains, of which there were several hundred in the cluster, resembled, in size and form, the grain of the common broom corn, were compactly set, without an outer or general covering, each grain having a delicate husk, covering about half its bulk. The grain was harder than wheat, rather brittle, and, when broken, gave a taste undistinguishable from that of Indian corn. From the limited knowledge of the nature and habits of the plant to be gathered from a cursory examination of this isolated specimen, we incline to the opinion that it may become a prolific and valuable article of agriculture. The "head," or cluster, that we saw, will yield about as much in weight and volume as fifteen or twenty ordinary heads of wheat. We shall learn more about this interesting specimen in a few days.—*S. J. Rep.*

Mr. E. D. Boylston, of the Amherst (N. H.) *Cabinet*, has experimented quite extensively with the Chinese sugar cane. He says:

"We have continued our experiments with the sugar cane up to the present time. The yield of syrup has steadily increased from the time of the appearance of the panicles some weeks since, and the quality has as steadily improved. Our last trial yielded one-sixth of syrup of the thickness of sugar-house molasses, and of a very fine quality. We think it will still improve until after a heavy frost, which will not injure the cane itself, which may be left standing while the leaves may be gathered at any time when likely to be destroyed. We are, as we were last year, fully sanguine in our belief of the practicability of raising this crop for syrup in this State."

Similar statements of opinions appear from various places in New-Hampshire, and from other places as far south. One writer says: "The taste of the syrup is indeed something like that of the "sugar house molasses, or syrup, and, in our opinion, much better for warm cakes than ordinary molasses." Will our readers send us a statement of their experiments with the sugar cane?

Our opinion has inclined favorably to the new plant for the South; and if it benefits the South, we have believed it would benefit the whole country, on the principle that the good of a part is the good of the whole; but we now incline to the opinion that it may be of direct benefit to all the parts; not to the North probably as a sugar-plant, but as one that may produce syrups, and is without much doubt a valuable forage plant.

The *Honolulu Commercial Advertiser* has the following "Hints to Agriculturists," not bad for this or any other latitude:

Independence of the Farmer.—The merchant or manufacturer may be robbed of the reward of his labor by changes in the foreign or domestic market entirely beyond his control, and may wind up a year in which he has done everything which intelligence and industry could do to insure success, not only without profit, but with an actual diminution of capital. The strong arm of mechanical industry may be enfeebled or paralyzed by the prostration of those manufacturing or commercial interests to whose existence it so essentially contributes, and on whom in turn it so essentially depends. But what has the intelligent and industrious farmer to fear? His capital is invested in the solid ground. He draws on a fund which has never wholly suspended or repudiated; his success depends on no earthly guarantee, but on the assurance of that great and beneficent Being who has declared that while the earth endureth, seed-time and harvest shall not cease.

Not so bad this from the *Chicago Ledger:*

"To Persons out of Employment."—Go to work! Take off your coat, roll up your sleeves, and look about you! If you can't find anything congenial or remunerative, in the city or town, betake yourself to the country. Better weed gardens and tend sheep, or follow the plowshare bare-footed, and tread on the furrows, or to act as a scare-crow in the cornfield, than to remain in the city, out of pocket, out at the elbows, in debt, in distress, and in misery, generally.

Don't be afraid to commingle freely with your mother earth, and sit under a cataract and be washed clean—be invigorated and feel like a *man*. The country is the place for you, decidedly, where pure air costs nothing, where the sunbeams steal through the cracks in your chamber and dance on the floor, where one doesn't have to walk a mile and a-half to see the sun rise, and where the waving grains bows gracefully to the gentle breeze, and eggs can be had for the hunting. Once there, and reïnvigorated, and you will look with pity upon us, poor mortals, walled in by brick and mortar on all sides, with the heavens far, *far* before us, and no hope of ever reaching that blessed abode.

New-England Farming.—We cut the following from the *Valley Farmer*, Louisville, Mo. Whether the New-England farmers manage as well as the writer represents, we are not so certain, but we are quite certain that he has "good notions" since he has been down east, about feeding, sheltering, caring for, and making improvements in cattle. Hear him:

"I see much in my New-England travels that I would like to speak of to your readers. There is life astir in all the valleys. There is beauty on all the hills. The season is a wet one and very productive, so that greenness and freshness make lovely every landscape. But just now I wish to speak of the *stock* of this country. As yet I have not seen a mean, poor, scrawny ox, cow or hog. They are all fat, sleek, and generally large. There has been a wonderful improvement in the stock of this country in the last ten years. And it has been almost wholly effected by good keeping and care in breeding from the best animals of their kind. In the parts in which I have traveled I have seen but little foreign blood. I think I have not seen a speckled or parti-colored ox or cow in New-England. I have met with one roan bull of the Durham breed. The farmers here like handsome cattle, so they choose their color. Dark red or chestnut is the prevailing color. Sometimes brown verging near to black will be found. The general build of the stock here is compact, close and hardy. It looks thrifty and active. One seldom sees a sleepy, dull looking animal. There is something bright and animating in the countenances of all the cattle I have met. They seem to be alive with the stir of the times, and to partake of the intelligence of the age. I speak not of horses, for New-England has not improved her horses so much as her cattle. What I have seen has convinced me more than ever that good keeping, good shelter, (for all stock is well housed here) and intelligent care in breeding, will be sure in the end to make good stock. This is emphatically a stock country. Stock is the main reliance of the farmer for money. Hence the farms here are continually improving. All the hay and grain raised is consumed on the farm, and converted into manure. Let the western farmer take heed in season."

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## Good Cheese.

For a cheese of twenty pounds, a piece of rennet about two inches square is soaked in a pint of water twelve hours. As rennet differs much in quality, enough should be used to coagulate the milk sufficiently in about forty minutes; no salt is put into the chesse, nor any outside during the first six or eight hours it is being prepared, but a thin coat of fine salt is kept on the outside during the remainder of the time it is in the press. The cheeses are pressed forty-eight hours under a weight of seven or eight hundred pounds. Nothing more is required but to turn the cheeses once a day on the shelves.

Mother's Premium Cheese.—The milk strained in large tubs over night, the cream stirred in milk, and in the morning strained in the same tubs; milk heated to natural heat; add rennet; curd broken fine and whey off, and broken fine in hoop with fast bottom, and put in strainer; pressed twelve hours; then taken from hoop, and salt rubbed on the surface; then put in hoop, without strainer, and pressed forty-eight hours; then put on tables, and salt rubbed on surface, and remain in salt six days for cheese weighing thirty pounds; the hoops to have holes in the bottom; the crushings are saved and set and churned to greese the cheese. The above is for making one cheese per day.

1. No salt to be put into the cheese, but fine salt rubbed on the surface.
2. Remain in press forty-eight hours.
3. Dry, cool cellar, not damp.
4. To make whey, add the rennet while the milk is warm.

I would like a cheese made after either of the above plans.—*J. M. B., in the New-England Farmer.*

## Cornfields.

We copy the following from that excellent paper, the *Germantown Telegraph*, not supposing that it will be quite new to all our readers, but because we regard it so practical and important as to be worth their reading twice, if any of them may have seen it before. Some will say, it is too laborious to prepare soil as nicely as the writer recommends. Perhaps so, and yet, while we are sure you will get more corn to the acre by such cultivation, we are by no means sure you will get less, in proportion to the labor required. We commend you to the article:

Mr. Freas: A few suggestions at this season, to those of my fellow agriculturists in relation to the management of lands that have been cultivated in corn, may not be unimportant. It is a common practice to harvest this crop, by cutting it up at the roots, leaving the latter and a portion of the stalks in the soil. When so left, both the roots and the stalks attached present a serious obstacle in the way of the after cultivation, diminishing, to a certain extent, the subsequent product whether of roots or grains. The most economical method, perhaps, that can be adopted, is to pull the plants from the soil, and detach the roots by the aid of a keen knife, or other efficient instrument, and convey them to the compost heap or hog yard. This practice secures a clean surface, and renders the operation of plowing, harrowing, cultivating and hoeing, much more easy, and secures a much larger extent of surface for the occupancy of the crop. Before plowing—whether that operation be performed in spring or autumn—every vestige of spurious vegetation should be moved, and the surface rendered as clear as circumstances will admit. Stones, stumps, and all substances of a similar character, oppose a serious obstacle to the successful performance of all the more important operations of husbandry, and their presence should not, on any account, be allowed. Very little time is required to get rid of them. As a general practice, I prefer plowing corn lands in the autumn. Not only is there more leisure time than during the more busy and exciting season of spring, but the team is more energetic, and consequently labors with less reluctance, and less fatigue. There is also another important advantage resulting to the farmer from the autumnal preparation of the land. Where clay abounds, the pulverulent action of frost and the elastic gases are of decided importance, rendering the texture fine and easily managed, and securing a more speedy decomposition of the manure when applied the subsequent spring. By careful examination, and from information of a most reliable nature, obtained from practical men during the last twenty years, I am irresistibly compelled to accord by suffrage to this practice, as being every way superior to every other method now in use; and this, I am persuaded, will be the conclusion of every one who carefully examines the subject. The finer the soil is made, the better adapted will it be to the production of any crop; but this fact does not appear to be appreciated as it ought by most of our farmers. They seem to suppose that if land is plowed, it matters but little *how* it is performed, or whether it be fine or coarse —reduced to a light, compressible mass, or merely broken into lumps. This is a fatal mistake, and one that requires to be corrected at once. If those who are at all sceptical on this point, will but make an experiment, they will have palpable evidence of the superiority of fine over coarse tillage. To all such, I would say, as a friend, *try it.* Jethro Tull promulgated the doctrine that pulverization alone would produce fertility, and that all that was actually necessary to secure the productiveness of any land, was to divide it into infinitesimal atoms, in which condition it would, he contended, be competent to produce, indefinitely, any and every variety of vegetable required. But this, subsequent experience demonstrated to be a fallacy. Still, however, the advantages found to result from the careful comminution of lands intended for cultivation, were, at the same time, demonstrated to be very great, and his views, although deprecated in the main, were nevertheless adopted in part, especially by those who had heavy and tenacious soils, and who could well afford to bestow the labor necesary to reduce them to the tilth required. We are all aware that garden beds receive far more thorough culture than lands devoted to field crops; that they are much more thoroughly plowed, to begin with, that they are worked till every lump is broken and reduced to that fineness of subdivision which renders it a fit medium for the finest and most minute seed. To this superior tillage, in a very great degree, we attribute the superior productiveness of lands under garden culture, to those under field culture. It has been proved, by repeated and accurate experiments, that a fine, light surface acts as a non-conductor, and that all lands finely divided in their particles, are capable of withstanding the effects of drought and intense heat for a much longer period than those which are not finely pulverized. Some "practical men" assume to question this fact; but let any one try it, and he will soon see enough to convince him of its truth. It is only making the trial, and will cost but a mere trifle.

## A New Animal for Farmers.

A valued friend and correspondent, in New-York, informs us, upon authority which is undoubted, that a naturalist in South America has undertaken to introduce into the United States from one hundred and forty to one hundred and fifty *Llamas*, the well-known animal of Peru and Ecuador, which are used there as beasts of burden, and which produce the wool, or rather hair, called alpaca. The adventure has been entered into by a very responsible house on the south-west coast of South America, who have collected the animals and chartered a vessel to transport them to Panama, whence they will be conveyed to New-York, where they are expected shortly to arrive, and will be offered for sale.

These are very hardy, docile animals, capable of carrying over the rockiest portions of the mountains of South America about three hundred pounds weight each. They are easily nourished, and it is believed that though coming from a much warmer climate than our own, they will stand our winters as well as our sheep, and be equally or more profitable in the production of wool. We shall keep our farmers apprised of the arrival of the first importation, and, if we are furnished with it, with the address of the party or house, having the disposal of them.—*Ger. Tel.*

# Horticultural.

## Northern Muscadine Grape.

The *Maine Farmer*, always sound, sensible and conservative, though we can not say whether correct in the present case, has the following remarks on this fruit:

The Northern Muscadine Grape.—The Northern Muscadine grape has made some noise in the world, and in regard to it the most contradictory opinions seem to exist, some pronouncing it a first-rate grape, some an ordinary one, and some good for nothing at all. It has been extensively propagated by the Shakers and claimed to be a seedling of theirs.

Friend Otis Sawyer, a member of the West Gloucester family, exhibited some of the fruit at the State Fair in Bangor, and specimens were laid before the Pomological Society. These were quite ripe, although raised in the open air. Although not coming up to the class of A. No. 1, it is nevertheless a good grape to those who relish a little touch of the musk, (and many do,) and considering its hardy character and early maturing, is worth a trial in this section of New-England. A prolific, hardy, and early ripening grape, is yet a desideratum with us in Maine. We should therefore make a trial of everything that promises to be successful in this way. The Northern Muscadine can be obtained of friend Sawyer. We are aware that our horticultural brethren farther south turn their noses up at it and call it "old red fox," but a good "red fox" with us is not to be despised, and it may lead to the propagation of a still better early variety. We must experiment on these matters for ourselves, and with reference to our own climate.

## Leather Scraps.

The parings of shoes, boots, harnesses, whips, trunks, portmanteaus, etc., are an excellent fertilizer, hardly equalled for durability. Nothing is better for vines; and they are good for all kinds of fruits. In some districts in England as high as 4 cts. a pound ($80 a ton) have been paid for them. Their excellence lies in the fact that they last a long time, and if placed under vines and fruit trees at transplanting, they will be changing into purple clusters and golden fruits for a lifetime.—Ed.

## How True.

In a recent number of *Hovey's Magazine*, the remark is made that "few complete and thoroughly made gardens and grounds are to be found. We see everywhere in the rapid increase of wealth and population in our suburban towns, fine buildings, erected almost by magic, in the highest style of architectural art, and finished without regard to expense. These costly dwellings, as well as those of more humble pretensions, meet our eyes in every direction, and would command our highest admiration, but for one defect. They are wanting in the elegant surrounding which should belong to every suburban residence; the lawn, the ornamental grounds, the fruit garden, or even the little parterre, have been entirely neglected, and they stand bleak and alone, an ostentatious display of wealth *without taste*, on the one hand, or the appearance of a depleted purse without the means of doing anything more on the other."

## A Good Method of Keeping Grapes.

"Dr. E. Liffingdale, of Aurora, N. Y., assures the horticulturist, that both himself and neighbors have no more difficulty in keeping grapes than apples. Gather them carefully on a dry day, remove all unsound or unripe berries and pack them in small, shallow boxes, with paper on the bottom and between the layers; set them in a cool, dry place for ten days, when they will have passed the sweating process, and *then close* them tight and keep them at a low temperature without freezing. A dry cellar will answer."

## The Birds.

Mr. Editor :—You are probably aware that against certain species of the feathered tribe, there exists a very strong prejudice in the minds of our farming friends. Of these, the crow comes in for rather more than his share, I think, considering the good he does. His labors may not, it is true, always result in the good of the farmer; but we should be candid in this matter, and allow the good he does to offset the evil. In the spring of the year, when there is a scarcity of those insects which nature has set apart, by a sort of special appropriation, as his peculiar food, he sometimes preys upon the farmer's corn; but as soon as the various tribes of vermin which throng the fields and "people the multitudinous air," issue from their dormitories and commence their depredations upon the vegetable world, the crow heroically enlists in the farmer's defence. He is no inactive ally, either; he carries the war into Africa, at once, and destroys whole hecatombs of voracious bugs, worms, flies, caterpillars, and other vermin which would soon lay waste his fields and his hopes, and effect more injury in one month, than his crowship effects in a lifetime. To hunt and destroy him, therefore, because during a period of scarcity, he manifests an inclination to take pay for his future services, is ungenerous and unkind, to say the least. When the farmer rightly comprehends his own interests, and looks upon the subject as he ought, he will be as anxious to preserve the crow from harm, as he is now to destroy him. There are other birds who, in like manner, are made to share in this ungenerous proscription; yet there is not one in the whole catalogue—quite a lengthy one, by the way—which does not effect far more good than harm. The number of insects which these birds destroy, is prodigious; and were it not for their labors, our fields would, in a very short time, be completely overrun and devastated by them. The fecundity of many of the aligerous, or winged depredators upon our crops, is truly astonishing, and nothing but the ceaseless and effective labors of our winged friends of the air prevents the total destruction of every vegetable upon which we rely for subsistence, both for ourselves and our animals. It is therefore much better to adopt some simple means for the protection—partial or entire—of our crops, than wantonly to destroy the birds, and let our fields be overrun with vermin.—*Germantown Telegraph.*

## Stunted Unthrifty Pear Trees.

Wm. Day, of Morristown, N. J., considers that one great cause of the unthriftiness of the pear, lies in the fact that many of them are worked (budded) upon sucker stocks. He tried the experiment by planting out 1000 of these suckers, obtained from old trees, and after nursing them for several years, during which he budded some and grafted others, giving all careful culture in good ground, he was compelled to discard the whole of them. A neighbor of his held on to them for ten years, but failed to get four good trees out of 100 planted. We fully endorse his (Mr. Day's) closing remarks, viz.: "Good, thrifty stocks and clean culture will alone produce vigorous and thrifty trees, and no respectable nurseryman will use any other."

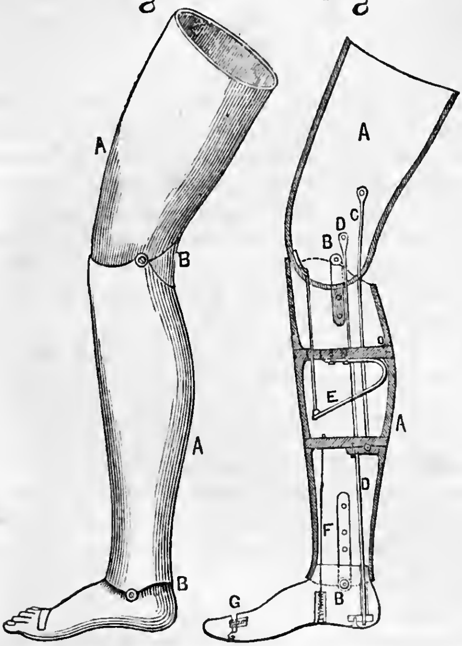
# MECHANICS' GUIDE.

## Recent American Inventions.

### Jewett's Patent Artificial Leg.

This leg is so constructed that its lower end overlaps the foot on all sides. In Mr. Palmer's patent, the leg overlaps the foot behind, and the foot overlaps the leg before. Mr. Palmer also has an opening in the top of the foot at the joint, allowing the entrance of dirt and lint upon the spring within the foot. Mr. Jewett's is free from this objection. The toe is kept down by a spiral spring, G, one end of which is inserted into the foot, and the other presses against the toe above the joint, and it is prevented from opening too far by the contact of the bottom of the foot and the toe. A spiral spring inserted in the hollow of the foot keeps the foot in its proper place, a cord passing through the spring and terminating in a wire hooked to a cross bar in the leg near it. The toes are so connected with the foot, that they can be removed by merely taking out a screw in each side of the foot. The knee and ankle bolts, B, are slightly tapering, both ends being squared and fitted to the inside of the plates, with a flat-headed screw in the smaller end, to secure the bolt in its place. By taking out those screws, the bolts can be easily removed for lubrication. These bolts pass through metallic boxes, F, and both bolts and boxes are of cast steel and hardened. By the use of a bent steel spring, E, in the leg, attached by a wire to the front of the knee, which may be used with any length of stump above the knee, the use of the wire spring used by Mr. Palmer is avoided. The tendon Achilles and knee cord, D and C, pass through apertures in the knee, and are attached to the thigh with blocks fitted into sockets in the wood. Every part is so constructed as to be easily removed.

Fig 1 Fig 2




### New Type Setting and Distributing Machine.

One of the most ingenious inventions we have ever examined is a new type setting and distributing machine, just patented by Mr. Alden of this city. The

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patent covers twenty-one points, and of course it requires many diagrams to exhibit the whole so as to be understood by the reader. These diagrams are not in existence, except in the letters patent, and hence we make only a statement of the prominent parts, with the specific points covered by the patent, viz.: 1. A method of conveying the type to and from the cases and the composing tables. These conveyers receive all type indiscriminately. 2d. The mode of attaching the conveyors to the carrier. 3d. A contrivance for giving to the conveyor a vibratory or tilting motion. 4th. Devices for arranging the types edgewise. 5th. Mechanism for pushing out the type upon the conveyors. 6th. Mechanism for preventing the stopping of a setting conveyor at a channel when full of types. 7th. The method of discharging the type from a distributing conveyor into the type channels. 8th. Mechanism for setting the gripping bolt upon the conveyors. 9th. The method of securing the deposit of the types into or taking them from the case. 10th. Stationary inclined planes. 11th. Movable indicators. 12th. Method of setting the distributing indicators. 13th. The graduated stop, in combination with the indicating levers, for regulating the feed of the line of type. 14th. Mechanism for moving the levers. 15th. Mechanism for feeding up the column of types into the channel, 16th. The method of engaging or disengaging the feeding pacols. The points numbered from 17 to 21 inclusive, regard the mechanism used in securing right movements in the parts already mentioned.

We regard this as a work of genius of high order, and from the evidence already exhibited, can hardly doubt that it will become of practical value.

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## Brown's Safety Alarm Detectors.

We saw and carefully examined sundry contrivances, or rather sundry applications of the same contrivance, now on exhibition in the Mechanics' Fair at Lowell, Mass., devised and patented by Mr. Ephraim Brown, of that city, for the detection of burglars. One of them is

### DETECTOR MORTISE LOCK FOR DOORS.

It looks precisely like any other mortise lock, with a knob handle, but whenever an attempt is made to open the door, a bell is rung. This bell is concealed within the casing. Ingenious arrangements are made by which the ringing may be prevented, and the alarm is thrown off from a given lock by different means, so that one who can open his own door without detection, can not open his neighbor's. Nor can even the maker of the lock. One hundred of these locks, it is said, in use only one year in one city, have detected seventy-four thieves, and not a case has occurred in which a thief has succeeded in opening one of them without ringing. Without reference to the alarm machinery, the lock is a very good one.

### WINDOW AND MONEY DRAWER DETECTOR.

The same application is fitted to a money drawer, and similar modes are adopted for preventing the action of the alarm, by any who are in the secret. It is also applied to a window, so that it can not be raised without making an alarm. The bell is in the casing. It does not ring when the sash is lowered. It holds the sash in different positions like any other spring. In the country, where watchmen and policemen are seldom employed, these detectors would be of very great service, and in the cities they might sometimes detect even the guardians of the peace in criminal attempts. Mr. Brown has published the testimonials of several gentlemen of high respectability, assuring the public that his statements may be relied upon, and that his engagements will be honorably fulfilled. Several thousand detectors have already been sold, many of them as a substitute for the night locks, so extensively used on outside doors.

IMPROVED STEAMERS.

Mr. Brown has also contrived a very convenient and useful affair for steaming vegetables, etc. It consists of a wire basket, to be set in any boiler, above the water for steaming, or in the water for boiling. In boiling eggs they are especially convenient. The whole number being immersed at the same moment, and all removed at once. They may be used advantageously in cooking potatoes, and in general they are convenient as a security against the scalding of the hands.

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## Sewing Machines—Grover & Baker's Stitch.

In our last number we described the different kinds of stitch taken by several of the most popular sewing machines, with diagrams of the stitch. The third diagram, (Grover & Baker's stitch,) gives an incorrect idea. We described this as a shuttle machine, that is as using two threads, while the diagram shows but one. The waving thread, advancing and retreating, there given, was intended to show only the general movement of the lower, which is operated on this machine by a curved hook beneath the cloth, and the diagram gives only an imperfect idea of this. This hook thread traverses only upon the lower side of the cloth, and this is curiously and ingeniously hooked into and interwoven with the needle thread, and each thread being doubly locked forms a stitch of great strength and elasticity. Each stitch fastens itself, and holds on, even if the seam be cut or broken every quarter of an inch. We make these corrections to prevent any injustice to the proprietors of this machine, from an error which was purely accidental, and shall probably have more to say upon the subject in our subsequent issues.

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## New and Curious Printing Machine.

There is no end to the progress of inventive genius. Hoe's exploits, on a grand scale, seem to bid defiance to competition, but some happy thought, directed by accident perhaps, may result in throwing even his wonderful inventions into the shade. At the other end of the series, the contrivance of simple, portable printing machines, stands a recent invention of Mr. S. W. Francis, of Frankfort street, in this city. Mr. Francis has availed himself of the simple and efficient arrangement of the finger board of the pianoforte, each key standing for a letter, by which he plays out printed lines with the same facility with which the musician throws off his melodies. His hammers are types, and all the strings or wires he uses are for the management of his types and the sheet to be printed. As to speed, he states that he can print "seven letters in a second." Two copies may be printed at the same time, on the principle of the letter copying press. The types may be of any size required. Mr. Francis believes that for editors, clergymen, etc., the use of this is preferable to that of the pen, and certainly for reporters and the like, aside from the inconvenience of transportation, it is a very useful invention, and clergymen whose sight is defective can hardly fail to find it of great convenience. For capitals, Mr. Francis uses the lower case, with a dash over the letter. Whether he can multiply his keys, so as to include a set of capital letters, without interfering with his mechanism, we are not informed. But he has contrived an ingenious and efficient machine, for which we hope he will receive a large pecuniary return.

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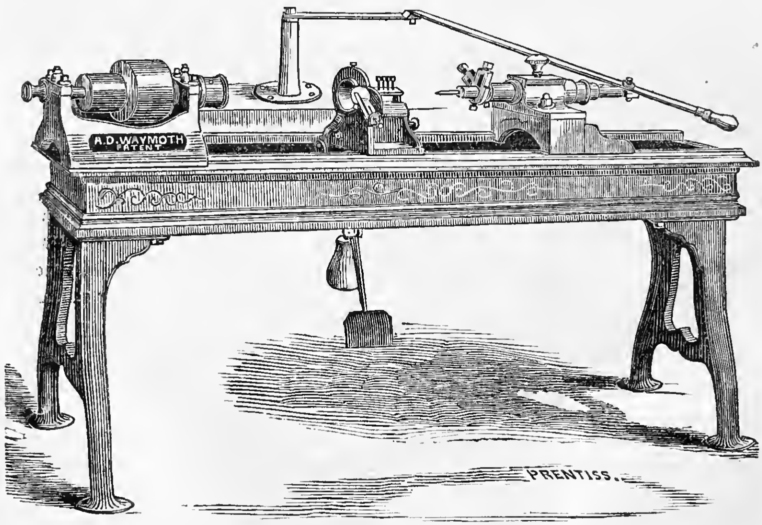
## American Institute.

We have made several visits, during the past month, to the Crystal Palace, and have carefully examined many of the articles on exhibition. The increase of machinery and of works of art, meanwhile, is very noticeable. We invite the attention of our readers to the following, and shall no doubt continue our descriptions in our next issue. There are thousands of useful and ingenious contrivances there quite worthy of the public attention.

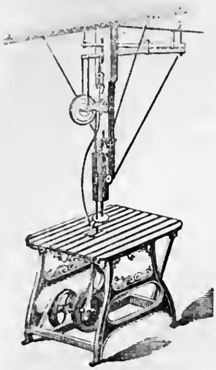
PATENT SPOOL AND BOX MACHINE.




Waymouth and Page, Fitchburgh, Mass., have one of the most ingenious machines we have ever seen. We have seldom seen one that works so rapidly and so well. It turns out some twenty-five wooden druggist's boxes per minute, though probably one man could not continue at this rate a long while. It is a most admirable invention, and can scarcely fail to be a good property to the patentee.

### PATENT SCROLL SAW

L. Wright, of Newark, N. J., has a patent scroll saw, which for nicety of movement, and for the ease of its management, and its capacity in meeting any demand made upon it in the way of scroll cutting, excels anything we have seen. We have made reference to this in a former exhibition of the Institute. These machines are of different sizes, according to the nature of the work required of them. By a peculiar arrangement of the saw and the spring, the latter moves only a fraction of the distance of the movement of the saw. Hence a speedier motion is practicable than if the spring had a longer vibration, and this also enables the operator to avoid the shaking or jarring usually produced by rapid motion of a saw.



### MEANS OF PRESERVING FERMENTED LIQUORS.

When cider, beer, ale, etc., are on tap, and the barrel is partly filled with atmospheric air, it is well known that constant and rapid changes in its condition are unavoidable, and if the bung is tight, no liquor can be drawn from the tap. These evils are readily obviated by a very simple contrivance of Mr. A. F. Boyd, of Zanesville, Ohio, who exhibits his elastic sack of thin India rubber, which is applied at the bung hole, or at the vent hole in the head of the barrel, and which expands as the liquor is drawn away, till it fills the barrel. It thus excludes all atmospheric air, prevents rapid fermentation, and secures a free discharge at the tap. A single bag may be made to serve for several barrels, all being connected by a tube.

### PATENT ROPE AND CORDAGE MACHINE.

W. R. Dutcher, Lansingburgh, N. Y., exhibits a very neat and compact machine for the manufacture of rope and cordage. His improvement, which was patented June, 1857, consists of a self-adjusting thimble, applied in combination, with a grooved cone, through which grooves the yarns or strands run, and by which the yarns are kept at a proper tension. It is cheap, simple, and effective.

### MAYES'S IMPROVED WASHING MACHINE.

This machine was patented in April, 1857, and consists of a sliding and revolving top, the under side of which, as well as the bottom of the tub, consists of a kind of corrugated surface, or a surface resembling one of boy's marbles, (though immovable,) by which the amount of friction is very much increased. The clothes are placed in the tub, the cover is allowed to drop down upon them through a central spindle, and is then made to operate in a kind of see-saw motion, by means of a handle upon the cover. It is by Josiah Mayes, Cohoes, N. Y. He claims that he can wash a dozen shirts in twelve minutes.

### KING'S WASHING MACHINE,

Which we have favorably noticed in former volumes, is also on exhibition, and is offered by the inventor, Thos. King, of Westchester, as saving much labor, and as secure against tearing even the finest fabrics.

PUMPS, ENGINES, ETC.

This department, as usual, is very fully represented at this fair, and it is impossible to make a perfectly fair comparison among them. Each one may be specially commendable in a certain view, or for a specific purpose, and taking cheapness into the account, the less meritorious, viewed as a power, may be preferable for ordinary family use, or even for more important positions.

Cary's pumps, for the amount of water they will throw a large distance, or for rapid work, we have considered the best. They have often commanded the first premium. They are valuable for ships, and for all cases where great power is desired. For fire engines, they have been preferred over all others, although they won a hardly-contested field before our city fathers, a year ago, in competition with a pump, now on exhibition also, from Seneca Falls. We fully described Cary's pump in our number for July, 1854, page 44.

The chronometer steam pump of Ruperts, Crumbie & Co., Brooklyn, N. Y., will throw a stream of ⅝ of an inch, 120 feet high, with a piston of 4½ inches in diameter.

The steam pump of Taylor, Campbell & Co., of Brooklyn, N. Y., throws two streams, each 1¼ inches in diameter, to the height of 125 feet. But this requires a piston ten inches in diameter.

The steam pump of C. and G. M. Woodward, with a piston seven inches in diameter, delivers 240 gallons in a minute.

The steam pump of Guild, Garrison & Co., Williamsburgh, N. Y., with a piston seven inches in diameter, throws a stream 1 inch in diameter, ninety-six feet high.

Wm. D. Andrews, of this city, has a power pump in the palace, which throws a powerful stream, we should judge, five or six inches in diameter.

Reed and Birkbeck, of Jersey City, have a very excellent portable engine, simple, compact, and efficient, suited for any kind of farm business. It received the first prize medal at the Industrial Exhibition in Paris, in 1855, where it is said to have been tested by the most eminent engineers of Europe. It is manufactured, to order, from two horse to two hundred horse power, and costs, complete for service, from $350, upwards. A fifteen horse power, complete, costs $1,550. If not portable, the cost is much less.

The Forest and Agricultural Steam Engine Co. have also a portable steam saw for felling trees, cross-cutting wood, etc. The steam is led through flexible hose a hundred and fifty feet, if desired. The boiler is mounted on wheels, and can be moved by a yoke of oxen. Three men, it is claimed, with one of these machines, will cut from 15 to 40 cords of wood per day. A slight change in the machinery, produces a farm engine of from six to eight horse power, capable of application to a great variety of farm labor, as driving a threshing machine, shingle mill, corn mill, cotton gin, straw cutter, pumps, etc. The cost is from $800 to $1,300, the last including extra machinery.

The hand suction and force pumps are quite as numerous as the power pumps.

Carpenter's rotary force pump and fire engine may be worked by hand or steam power. It has no valves and requires no packing. It seems to be a modification of the device used by Cary. Its working machinery is contained in a hollow cylinder of some four or five inches in diameter, in which a revolving solid piston plays, moved by a crank or other convenient machinery. It is said, by the proprietor, to work efficiently in deep wells, mines, etc.

Dodge's Suction and force Pump is operated by steam or hand power, and is a capital pump. It is without valves or chambers, India rubber balls being substituted. Hence it requires no packing. Prices vary from $15, for cylinders two inches diameter and three inches stroke—often used as a green house engine, to $175, which will buy a small fire engine for villages, factories, or plantations. It is well worthy of public attention.

BENZOLE GAS LIGHT.

This old friend of ours shines as brightly as ever. The only difficulty with this, as we have repeatedly stated, is the want of benzole. The market, hitherto, has not been well supplied with it.

AIR BLAST OR BLOW PIPE.

This is a recent addition or annexation to the Benzole gas light, is very convenient and economical, and is worthy the attention of chemists and mechanics.

BRECKENRIDGE COAL OILS.

These oils are variously prepared for illumination, lubrication, etc., and the former produces a very brilliant light at a very moderate cost. It requires a lamp of peculiar construction. Coal wax, or paraffine, gas, naptha and asphalt, are produced from the same coal. The paraffine makes beautiful candles, as we recently stated. Depot in New-York, 98 Greenwich street. Manufactory, Cloverport, Ky.

SAFFORD'S PATENT WINDOW-SASH ADJUSTER.

This has been in use three years, on several railroads in New-England, and in steamboats, and has proved itself to possess several advantages. It is free from noise, excludes the dust when the window is closed, dispenses with catches, bolts, etc., provides for the shrinking and swelling of the wood, and is easily repaired. It consists of a small spiral spring, fixed in the edge of the sash, pressing against the casing. Hence it can be applied to any window. As long as the spring retains sufficient elastic force to resist the tendency of the sash to fall, it is certainly the most desirable of all the *adjusters* we have seen.

PLIMPTON'S COMBINED SECRETARY, BEDSTEAD, AND TOILET-TABLE.

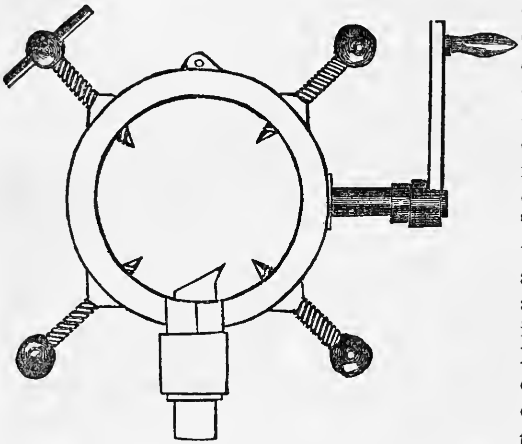
This is not a new thing to our readers. It was one of the attractive features of the World's Fair, and has been exhibited in many State Fairs. As a tasteful and convenient combination of useful furniture, as its name imports, it is unrivalled.

## New Process in Forging Iron.

ONE of the most valuable processes in the forging of iron is that invented by Mr. Nasmyth, by which the certainty of the production of perfectly sound cylindrical forgings, especially those of large size, such as shafts, axles, and the like, is increased. A wedge-shaped or V anvil is used, between the jaws of which the work to be hammered is placed. In this case, instead of a tendency to spread, so as to render the central portion of the metal less compact and solid, there is exactly the opposite effect, besides which the article is more easily kept under the hammer, and the scales or impurities which fall from the hot iron fall down into the apex of the V out of the way, thus removing the blemish and roughness which is caused by the scales collecting on the face of the anvil and being beaten into the surface of the metal.

## Machinery for Cutting Down Trees.

We have by accident delayed a notice of the invention of Mr. G. C. Ehrsam, of this city, for cutting down trees, patented in June, 1856, and manufaceured and sold by Eveleth & Bissel, Pine street. The cutting part of the machinery is represented in the engraving in the margin. This is made to encircle the tree, and is moved around it by strong and accurate gear work, which is connected with a crank. It is claimed that these cutters will do the work of from four to eight men; that a two-foot tree can be felled in from eight to twelve minutes, and that each cutter will fell from a hundred to a hundred and fifty trees without sharpening. It can be used within five inches of the ground. The cut surface of the stump will be left flat, thereby securing speedy decay. Price, from sixty dollars, (for machines two feet in diameter,) and upwards according to size.



## Concentrated Milk.

The Winstead (Conn.,) *Herald* contains the following description of Mr. Gail Borden, jr's., process of concentrating and preserving milk:

"The milk, as it is received from the neighborhood farmers, (they being paid some two or three cents per quart for it,) in cans of six or eight gallons each, is at once deprived of its animal heat by placing the cans in ice-cold water. It is then, while in the cans, subjected to a heat of 160 to 190 degrees—a few degrees below the boiling point. Thus prepared, the milk is immediately transferred to the boiler, a huge receptacle of cast iron, of incalculable strength. While there subjected, by means of steam, to a heat of but 120 to 160 degrees, the air is withdrawn by two nicely adjusted air-pumps, and the process of evaporation commences. The vapor, as it forms, and this it does with surprising rapidity, within the vacuum, is as rapidly condensed and thrown off by means of the pumps, and so quick is the process that, according to our information, a boiler of 500 quarts can be reduced to 125 quarts within one and a half hours. The liquid thrown off by the evaporation is clear, like water—has a sickish, unpleasant taste—in no way resembling milk, and its smell is slightly offensive. It is considered that the concentrated article is rendered purer by the process, to say nothing of its other advantages."

## Recent Patents,

[ISSUED FROM THE U. S. PATENT OFFICE, FROM SEPTEMBER 8 TO OCTOBER 6, 1857.]

### Agricultural.

Hulling Rice, Wilson Ager, Rohrsburg, Pa.—Cleaning Rice, same.—Mowing Machine, A. H. Caryl, Sandusky, O.—Raking Attachment for Reapers, same.—Same, Christian Yost, Leacock, Pa.—Apparatus for Grain and Grass Harvesters, J. W. Bultzly and Wm. Hobson, Pana, Ill.—Machine for Binding Grain, Jos. F. Black, Lancaster, Ill. This sheaves and binds the grain as fast as it is cut by the reaper. It is to be attached to reaping machines.—Reaping and Mowing Machine, J. G. Dunham, Raritan, N. J.—Harvester, A. B. J. Flowers, Greenfield, Ind. Grinding the machine by means of castor wheels, and adding an endless apron and a new discharging device.—Rake for Harvesters, Isaac Van Doren, Somerville, N. J.—Harvester, Samuel Pennock, assignor to himself and Morten Pennock, Kennett's Square, Pa.—Corn Sheller, J. J. Parker, Marietta, O.—Grain Drill, Henry Beitzell, Centerville, Ind.—Corn Sheller, A. M. Cook, Milford, Mass.—Mode of attaching Scythes to Snaths, Wm. T. Clement, Shelburne Falls, Mass.—Sod Cutters, Nelson Newman, Springfield, Ill.—Reaping and Mowing Machine, M. E. Ellsworth, Hudson, O.—Cultivator, Wm. J. Forshee, Indianapolis, Ind.—Corn Husker, A. M. George, Nashua, N. H.—Same, H. P. Gerrish, Sandoval, Ill.—Seed Planter, W. Y. Gill, Henderson, Ky. Same, A. M. Gould and Albert Flanders, Cambria, N. Y.—Plough, Manasseh Grover, Clyde, O.—Hill-side Plough, A. J. Hardin, Shelby, N. C.—Rake, A. A. & Andrew Hotchkiss, Sharon Valley, Ct.—Guard finger for Reaping Machines, Charles Howell, Cleveland, O.—Machine for Shucking and Shelling Corn, Sandford Kingsbery, Carrolton, Ga.—Gang Plough, L. S. Kingston and David Gore, Plain View, Ill.—Seed Planter, C. O. Luce, Brandon, Vt.—Seeding Machine, Daniel and A. S. Markham, Monmouth, Ill.—Seed Planter, Hosia Willard, Vergennes, Vt.—Plough, Thos. Sharp, Nashville, Tenn.—Corn Sheller, Ancil Stickney, Concord, N. H.—Corn Husker, W. H. Smith, Newport, R. I.—Seed Sowing Machine, Wm. C. Squier, Rockford, Ill.—Balancing Threshing Cylinders, Damon R. Averhill, assignor to himself, James F. Davis, and Henry Twitchell, Pulaski, N. Y.

### Metallurgy and Manufacture of Metals.

Socket for Bolts, H. W. Collendar, New-York.—Pointing Wire, C. Jillson, Worcester, Mass.—Lock, H. W. Covert, Roxbury, N. Y.—Same, J. L. Hall, Cincinnati, O.—Nut Machine, S. H. Whitaker, Cincinnati, O.—Wrench, H. D. Blake, New Hartford, Ct.—Bit Holder, Ben. B. Hill, Chicopee, Mass.—Spike, Orin Newton, Pittsburgh, Pa. Constructed with concave sides, etc.—Wire Fences, J. B. Reyman, Bloomington, Ill. A mode of bending or kinking the wires.—Manufacture of Metallic Squares, Samuel Darling, Bangor, Me.—Saw filing Machine, Harley Stone and J. S. Cole, Blackstone, Mass.—Curry-comb, N. C. Harris and Alonzo Butler, Poultney, Vt.—Melting and Refining Iron, G. P. Miller and Hugh Dougherty, Lancaster, Pa.—Power Looms for weaving wire cloths, E. B. Bigelow, Boston, Mass.—Cutting Metal Caps for nail heads, Zachariah Walsh, assignor to Cornelius Walsh, Newark, N. J.—Stove Cover Stand, Hiram Carsley, Lynn, Mass.

### Manufacture of Fibrous and Textile Substances.

Hardening Hat Bodies, Joseph Booth, Newark, N. J.—Making paper pulp from ivory, William N. Clark, Lancaster, Pa.—Treating fibrous and textile substances, Julius A. Gillson, Poughkeepsie, N. Y., and Henry Whitney, New-York. In a perfect vaccuum for extracting coloring matter, grease, etc.—Treating cotton and linen waste, Eben Norton Horsford, Cambridge, Mass. The use of acid to dissolve metallic particles in cotton and linen factory waste.—Harness for Looms, George Matoon, Chicopee Falls, Massachusetts. A mode of making a harness so that its lease and knot shall be below its eye, and the threads of each loop be caused to pass against one side of their shaft or bar instead of being caused to embrace opposite sides of it, namely, first knitting the harness with a lease at top and one at bottom, or one above as well as one below each eye, and subsequently changing the upper shaft so as to pass it between the several loop threads of the upper side of the harness in such manner as to make both threads of each loop pass against one side of the shaft.—Preparing tracing muslin, Jesse K. Park, Marlborough, N. Y. The use of the oil of Palma Christi, or of castor oil, alone or as an ingredient, in the composition for increasing the transparency of tracing muslin.—Carding Engine, Wm. H. Walton, Brooklyn, N. Y., and G. H. Phinney, New-York. The use of a rotary brush for stripping the main cylinder in combination with a lever or its equivalent.—Sewing Machine, Edward A. Jenks and John Underwood, Lowell, Mass. A new kind of looper and a spring feed piece, with its pressure guide or sheatn, etc.—Hemp Brake, Conrad Simon, Louisville, Ky.—Coating hose pipe, Charles R. Hinckley, Stonington, Ct. Constructing a hose pipe of textile and fibrous materials, with an internal coating of vulcanized India rubber, first applying the rubber outside, and afterwards inverting the same by drawing it over and through a metallic cylinder.—Cork sole stuff, William Johnson, Brooklyn, N. Y. The making of cork cloth, by said process, for inside soles and lining of boots, shoes, and other articles, for which solid sheet cork has been used.—Machine for measuring cloth, Wm. Y. Wythes, St. Clair, Pa.—Machine for forming and hardening hat bodies, A. C. Arnold, Norwalk, Ct.—Machine for packing wool, Chas. Carlisle, Woodstock, Vt.—Curtain Rollers, D. N. B. Coffin, Jr., Newton Centre, Mass.—Machine for Packing Wool, Albert Dorr, Orleans, Mich.—Sewing Machine, Millford H. Nettleson and Charles Raymond, Bristol, Ct.—Same, E. H. Smith, New-York.—Machine for picking cotton in the field, Jos. W. Thorn, Courtland, Ala.—Sewing Machine, Wm. C. Watson, assignor to himself, Geo. H. Wooster, and Ira W. Gregory, New-York.

### Chemical Processes, Manufactures, etc.

India rubber paint, Wm. & Wm. A. Butcher, Philadelphia. A composition for making a water-proof paint.—Mastic Roofing, Wm. H. Carver, Covington, Ky, and J. Beekley, Cincinnati, O. "The precise manner employed of mixing and compounding the ingredients composing the cement, when combined with the proportions of ingredients, as specified, by which process of mixing and compounding and combination of ingredients, and applying the cement to use, we are enabled to decompose or destroy the ammonia contained in the coal tar, to prevent it from destroying the cement and eating the canvas on which it is spread, and at the same time produce a cement that is not brittle and subject to cracking, but hard enough to resist forces that roofs are generally subject to, and at the same time elastic enough to expand and contract to suit all conditions of heat and cold, and make the cement water-proof."—Preserving alkalies, George Thompson, East Tarentown, Pa. The use of metallic boxes, united with refusible cement, for putting up caustic alkalies in small quantities.—Cooler, W. F. Messenger and Henry Rehahn, New-York. Adapted for casks containing liquids on draught.—Composition for covering meats, John J. Bate, Brooklyn, N. Y., and Francis S. Lowe, Jersey City, N. J.

The use of shellac, varnish and beeswax, etc., in composition.—Lard rendering kettle, John J. Bate, Brooklyn, N. Y.—Preparing roofing cements, Robert T. Havens, Casstown, O.—Factitious oils, Joseph W. Harman, Elizabethtown, N. J. The use of the residuum of candle factories in the manufacture of compound oil.—Separating oily matter from water, James Naughten, Cincinnati, O. —Cooler for breweries, Adolph Hammer, Reading, Pa.—Drip pots for sugar houses, John Turl, New-York.—Brewer's Coolers, Adam Wood, Pittsburgh, Pa. A double bottom of corrugated iron, through which cold water constantly runs.—Making white lead, Henry Hannen, Dubuque, Iowa.—Bronzing liquors, Henry Hoffman, New-York.

### Calorifics.

Gas Generator, John Butler, Brooklyn, N. Y Generating gas in a retort over the surface of melted lead and other fusible metal.—Illuminating Gas Apparatus, Chas. B. Waring, Poughkeepsie, N. Y.—Gas Burner, Wm. W. Batchelder, New-York.—Steam Heating Apparatus, Edmund Gibbs, Madison, Wis.—Gas Burner, William H. Lindsay, Brooklyn, N. Y.—Apparatus for roasting on cooking stoves, ranges, etc.; Samuel Peirce, Troy, N. Y.—Protecting buildings from fire, Thomas Odion, Portsmouth, N. H. By means of a portable screw.—Hydro-carbon Vapor Lamp, Isaac Suggitt, Providence, R. I.—Hot Air Registers, Sylvester J. Sherman, New-York.—Coal Stove, Wm. H. Stinson, Baltimore, Md.

### Steam and Gas Engines, &c.

Operating valves of steam engines, Robert H. Fletcher, Brooklyn, N. Y.—Valve gear for oscillating steam engines, John C. Penninghu, Paterson, N. J.—Arrangement of passages and means for working steam valves, by the direct action of steam, Barnabas Roberts and Alex. Crumbie, assignors to themselves and John Benson, Brooklyn, N. Y. An arrangement of the steam channels, which are opened and closed by the travel of the main piston, connecting the steam chest and cylinder as described in combination with pistons of equal areas, or their equivalents, etc.—Metallic packing rings for steam engines, P. Clark, Rahway, N. J. A number or series of layers or lamina of sheet metal, with flexibility enough to be bent round a rod, etc.—Rotary Steam Engine, D. C. Turner, Aztalan, Wis.—Valve gear for oscillating steam engines, N. W. Wheeler, New-York.—Steam Pressure Guage, Henry Bates, New-London, Ct.—Steam Boiler, Wm. M. & Jonas B. Ellis, Washington, D. C.—Variable eccentrics for operating the valves of steam engines, S. L. Wiegand, Philadelphia.—Tank for Locomotives, John Kimball, Concord, N. H., assignor to Robert Hale, Roxbury, Mass.—Steam Generator, Julien F. Belleville, Nancy, France.—Locomotive Cow-Catcher, James Mitchell, Osceola, Iowa.

### Navigation and Maritime Implements.

Ships' Pump, Abraham Coates, New-York.—Feathering paddle-wheels, Lewis T. Howard, Smith's Mills, Miss.—Reefing and furling sails, G. W. La Baw, Jersey City, N. J., assignor to himself and Chas. A. Durgin, New-York.—Life-boats, M. M. Camp, New-Haven, Ct.—Diving Apparatus, George Williamson, Brooklyn, N. Y.—Life-Preserver, Charles J. Banker, New-York.—Marine Propelling Apparatus, Ethan Campbell, Boston, Mass., assignor to Wm. P. Page, Cambridge, Mass., and Edward F. Hodges, Boston.

### Civil Engineering, Architecture, &c.

Excavator, Ze Butt, Lincolntown, N. C.—Sustaining Window Sash, Edward T. Briggs, Salem, Mass.—Street Sweeping Machine, John Critcherson, Boston, Mass.—Bridge, Charles H. Earle, Green Bay, Wis. A bridge so constructed as to rise and fall with the change of water level, being self adjusting.—Safety fuse compositions, Edward Gomez and Wm. Mills, New-York.—Operating Window Sash, John C. Grant, Salem, Mass.—Controlling cog gear sash balance, John Mac Murtry, Lexington, Ky., assignor to Dan. Wiehl, Fayette Co., Ky.—Apparatus for loading logs on wagons, Philander Gilbert, Alexandria, O. A portable frame combined with a windlass.—Connecting and disconnecting the blocks of iron or other pavements, Barzillai C. Smith, Burlington, N. J.—Trussed Bridge, Abram S. Swartz, Buffalo, N. Y.—Approach Opening Gate, Charles A. Howard, Pontiac, Mich.—Opening and closing Vertico-lateral folding gates, Francis Thrasher and H. B. Horton, Akron, O.—Rock Cutting and Drilling Machine, Wm. Plumer, Boston, Mass.—Extension Elevator, Pierce Porter, Hookset, N. H.—Oil pressing machinery, Wm. Wilbur, New-York.

### Land Conveyance.

Railroad Car Seats, J. H. Swan, New-York.—Carriage Prop, Chauncey Thomas, West Newbury, Mass.—Window for Locomotives, Henry Skinner, Fulton, N. Y.—Lubricating Carriage Axles, Albert A. Vedder, Lysander, N. Y.

### Hydraulics and Pneumatics.

Hydraulic Engines, John D. Heaton, Dixon, Ill.—Pump, J. D. West, New-York.—Regulating the velocity of wind-wheels, Francis Peabody, Salem, Mass. —Shower Bath, Wm. Miller, Walthem, Mass.—Wind-wheel, Wm. Zimmerman, Quincy, Ill,

### Grinding Mills, and Mill Gearing.

Grinding Mill, Aaron Arnold, Troy, N. Y.—Flour Bolt, N. Bauman, Elmore, Ill.—Hanging Mill Stones, Edwin Clark, Lancaster, Pa.—Bearings for mill stone drivers, same.—Horse Power, G. E. Burt, Abram Wright, and G. F. Wright, Harvard, Mass.—Drilling and Milling Machine, Wm. D. Sloan, New-York.—Journals of axles with friction rollers, George A. Prentiss, Cambridge, Mass.

### Lumber, Tools for Preparing, etc.

Spoke Machine, Samuel Lord, Perry, Ga.—Tenoning Machine, Perry Putnam and John E. Crone, Lowell, Mass.—Manufacturing Shingles, J. E. Young, Augusta, Me.—Lathe for the manufacture of clothes-pins, etc., John Humphrey, Keene, N. H., assignor to himself and Amos E. Perry, Harrisville, N. H.—Filing and setting saws, Ansby C. Smith and Joseph K. Creighton, East Birmingham, Pa.—Holding and setting logs in circular sawing machines, James H. Batchelder, Rome, Mich.—Cutting Bungs, Josiah Kirby, Cincinnati, O.—Attaching adjustable handles to joiners' planes, Thos. D. Worrall, Lowell, Mass. —Saw Filer, J. J. Near, Oneida, N. Y., assignor to Eli Near and Levi Vandusen, Madison Co., N. Y.—Joiners' Bench, J. W. Mahan, Lexington, Ill.—Sawing Shingles, Jesse Gilman, Nashua, N. H.—Wood Boring Machine, Lafayette Stevens, assignor to Wm. L. Gibson, Elmira, N. Y.

### Stone and Clay Manufactures.

Brick Machine, G. J. Washburn, assignor to himself and Anson L. Hobart, Worcester, Mass.—Manufacturing Pottery Ware, Philip Pointon, Baraboo, Wis. —Brick Press, E. H. Bellows, Worcester, Mass.

### Leather, Tanning, Dressing, &c.

Belt Tool, David A. J. Lamson, Cherry Valley, Mass.—Improved boot and shoe sole cutter, Parker Wells, Middletown, Mass., assignor to Samuel Mower, Boston, Mass. A cutter with a yielding slide.—Edge-plane for trimming boot and shoe soles, J. A. Dunham, North Bridgewater, Mass. A cutting blade and guard that, together, forms a circle or very nearly, and so arranged as to be set up to its guard as fast as it becomes worn, by simply turning said cutter on its center.—Stirrups for riding saddles, James Neill, Yorkville, N. Y. An arrangement for releasing the stirrup from its strap when the rider falls.—Hame tug fastening, Wm. J. Lockwood, Sturgis, Mich.—Manufacture of the uppers of boots and shoes, without seams, Samuel Middleton, England.—Hollow metallic lasts, Sylvanus H. Whorf, Malden, Mass. A last with a yielding spring instep.

### Household Furniture, Machines and Implements for Domestic Purposes, &c.

Kneading dough, Hiram Berdan, New-York. A rotating "flipper" to rotate through the dough, cutting it, etc.—Invalid Beds, George H. Clark, Pontiac, Mich.—Fly Trap, S. R. Wilmot, Watertown, Ct.—Spring bed-bottoms, Henry J. Smith, Washington, D. C.

Arts—Polite, Fine, Ornamental, &c.

Expanding spectacle bows, George N. Cummings, Hartford, Ct.—Painter's Easel, George Gillett, Little York, N. Y.—Watchmaker's Lathe, Roswell H. St. John, Bellefontaine, O.—Diaphragm for photographic cameras, J. R. Werner, New-York.—Type setting and distributing machine, Timothy Alden, New-York, (see another page.)—Safety clasp for bracelets, etc., Isaac Hermann, New-York.—Sleeve Fastener, David C. Peacock, Brooklyn, N. Y.—Hand Stamp, T. J. W. Robertson, New-York.—Machine for distributing type, Wm. H. Mitchell, Brooklyn, N. Y.—Pencil Sharpener, J. W. Strange and Samuel Darling, Bangor, Me.—Fastening for Jewelry, John T. Folwell, Philadelphia.—Reed stops for musical instruments, Amos B. Hughes, Philadelphia.—Setting diamonds, etc., Isaac Lindsley, Providence, R. I.—Stemming and polishing peanuts, Samuel Sheppard, Nashua, N. H.—Fountain Pen, A. F. Warren, Brooklyn, N. Y.

Fire Arms, &c.

Ball Cartridges, Lemuel Wells, Astoria, N. Y.—Safety fuse compositions, Edwin Gomez and Wm. Mills, New-York.

Miscellaneous.

Burglar's Alarm, Simeon Coon, Ithaca, N. Y.—Portfolio, or music Stand, Augustus Eliaers, Boston.—Fly Trap, S. R. Wilmot, Watertown, Ct.—Fire Escape Ladder, Henry Lorvenberg, New-York.—Apparatus for opening oysters, Waldren Beach, Baltimore, Md.—Cribs of horses stables, William Croasdale, Hartsville, Pa.—Burglar's Alarm, E. M. & J. E. Mix, Ithaca, N. Y.—Awning frame for horses, N. Pullman, New-Oregon, Iowa.—Fastening for metallic bands of cotton bales, etc., Charles J. Provost, Sardis, Ala.—Mode of attaching elastic soles to horse shoes, Wm. Somerville, Buffalo, N. Y.

## Recent Foreign Inventions.

### New Process for Preserving Timber.

Among the expedients adopted for the purpose of preventing the decay of wood, the following, by the eminent French chemist, Dr. Boucherie, seems worthy of special attention. The following is his method of operation:

After the tree has been felled, a saw-cut is made across the center through about nine-tenths of the section of the tree. The tree is then slightly raised at the center by a lever or wedge, so as to open the saw-cut a little; a piece of string or cord is placed all round the edge of the saw-cut, and on lowering the tree again, the cut closes upon the string, which thus forms a water-tight joint in a simple and effectual manner. An auger hole is then bored obliquely into the saw-cut from the outside, into which is driven a hollow, wooden plug, to which a flexible tube is fitted. The tube communicates with a raised cistern, placed at a height of from 30 to 40 feet above the timbers that are to be prepared, and containing a solution of sulphate of copper. When the preparations have been completed, the liquid flows through the tube into the saw-cut in the tree, and forces itself along the log in both directions, driving the sap out at each end. As soon as the liquid has reached the ends of the log, the process is finished and the log is ready for use.

If the timber is required of the entire original length, the cross saw-cut at the center can not be made, and instead thereof, a cap, consisting of a piece of board, ¾ inch or 1 inch thick, is fixed on the end of the log by screws or clamps, and made, by means of a piece of string or cord, to enclose a space at the end of the tree. As the direction of the grain in the board forming the cap is transverse to that of the tree, the liquid can not pass through the cap, and the injection proceeds from one end of the log to the other.

In order to ascertain when the process has been continued for a sufficient length of time, so that the sap has been all expelled and replaced by the solution of sulphate of copper, a piece of prussiate of potash is rubbed on the end of the timber while in the damp state, and if the solution has reached the end of the log a deep reddish brown stain is produced, showing that the timber is thoroughly impregnated with sulphate of copper.

The sap expelled from the timber in the process of impregnation contains at most only 1-1000th part of organic matter in solution, and accordingly no inconvenience is experienced in employing it as a solvent for the sulphate of copper. It is, indeed, preferable to many kinds of spring water, particularly those containing lime, which decompose a considerable proportion of sulphate of copper. Troughs are therefore laid under the ends of the logs to catch the sap and the waste solution, which are conducted to a reservoir to be pumped up to the cistern and mixed with sulphate of copper to the proper strength.

The solution that has been found most effectual for preserving the timber is composed of 1 part by weight of sulphate of copper, and 100 parts by weight of water. The strength of the mixture is ascertained by a hydrometer, having a properly graduated scale. The specific gravity of water at 60° Fahr. being 1000, if 1 per cent. of sulphate of copper is added, the specific gravity of the mixture will be 1006, nearly.

The sooner the trees are prepared after being felled, the better, and it is therefore advisable to prepare them as near as possible to the place where they are felled. Trees felled at any time between November and May, may be prepared in May; but those cut down in May, or at any time from May to the end of November, should be prepared within three weeks from the time of being felled.

In the course of the operations carried out in the practical application of this process, the following facts have been ascertained:

All kinds of wood do not absorb equally, and the absorption of the liquid is more rapid in the sappy parts than in those nearer the heart of the tree.

The quantity of the solution forced into the timber is equal in cubic measure to at least one-half of the cubic dimensions of the timber. When a solution containing about 2½ lbs. of sulphate of copper in every 22 gallons, has been forced through a log, it appears, after allowing for the sulphate carried off by the sap, that every 35 cubic feet of wood have retained from 11 lbs. to 13 lbs. of sulphate of copper.

For a log about 9 feet long, the process of impregnation occupies two days, when the timber is newly felled and the solution is supplied by a head of about 3½ feet. If the wood has been felled three months, three days are required; and if four months, four days are necessary to complete the impregnation.

Of different kinds of tree, those which possess most moisture are most easily penetrated by the solution; and of the same kind, those which have grown in the dampest soils. Hence the least valuable and cheapest kinds of timber are precisely those which give the best results when impregnated with the sulphate of copper.

## Improvements in Castors.

By Thos. Bird and Thos. Rose, Manchester, Eng.

This invention consists in making the lower or rolling part of castors in the form of spheres, globes, or balls, of any convenient dimensions, having their upper parts pressing against one or more smaller balls or spheres, the whole being enclosed in suitable standards or frames, either with or without anti-friction rollers, pulleys, or balls. The frame of the castor is provided with a screw, in order to lengthen or shorten it, when required to adjust the article of furniture to a proper height, and if the surface of the floor is uneven, to adjust it to the various inequalities, and give it a perfect level, which arrangement will be found peculiarly applicable to pianos and similar articles.

In this improved castor the large sphere or ball is made of glass, and the small one of ivory, or similar material,—thus making it a double spherical insulator peculiarly applicable to pianos, harps, or other musical instruments.

## Improvements in the Construction of Axles and Boxes of Carriages for Common Roads.

By Richard Emery, St. James's Square.

This invention consists in so constructing the axles and axle-boxes of carriages for common roads that the wear on the bearings of such axles and boxes will be uniform, and that the lateral lashing against the back and front of such axle-boxes will be provided for in a better, cheaper, and more simple way than is common in axles and axle-boxes of the present known constructions.

The improvements consist, firstly, in having the front and back bearings parallel with the axis of the axle, or in other words, parallel with a center line drawn through the axle bearings, which parallel bearings, although of different diameters, will be always uniform in their wear; the surfaces being equal both in the bushing, for the bearing in the axle-box, and the bearing part of the axle-arm.

Secondly, in constructing the axle-boxes of any known or suitable metal, and bushing them with a different metal from that which the box is made of.

These bearings may, if of steel, or case-hardened iron, or hard compositions, be screwed or driven into their places, or shrunk in, or be run in, if of the softer compounds or simple metals.

## New Mode of Applying Metals to Surfaces of Wood, Pottery. etc.

The process for coating vitrified or enamelled surfaces is as follows: Suppose the object to be treated by the process to be a china vessel, cover first that part of it which is intended to receive the coating of metal with a layer of varnish, or gold size; and when the layer of varnish has become sufficiently dry, apply copper leaf to it, so as to cover it well, and leave the whole to dry completely; carefully remove all dust from the surface, and place the vessel so prepared in a bath containing a solution of sulphate of copper. By submitting now the vessel so prepared to the action of a galvanic battery, as usual a deposit of copper takes place; and when the deposit has acquired a sufficient thickness (for which purpose about 60 hours immersion will be necessary) the vessel is taken out of the bath, cleaned, and smoothed by filing off the asperities, and finished with pumice-stone, to be finally polished as required.

The coppering may also be effected by another process, which is considered to be as efficacious, and more convenient and easy than that just described. It consists in making use of German gold dust or bronze powder containing much mercury; this metallic powder is a very good conductor. It is to be triturated with common salt. When well mixed, it is put into an earthen basin, and hot water is poured over the mixture; the salt then dissolves, and the copper dust is left to settle. The deposit thus formed is collected, dried, and used as a conductor for the metallic coating to be given to the vessel.

By a similar process the silvering of looking glasses can be preserved from the effects of dampness,—the glass being thus rendered at the same time less liable to break. It is done as follows: Melt together equal quantities of bees'-wax and tallow: when the mixture has become completely fluid and quite homogeneous, the glass is dipped into it and taken out immediately; it is then allowed to cool, and the parts which are required to be coppered are prepared with metallic powder, and treated in the same manner as before mentioned.

For metallizing objects the surface of which are soft, such as animal bodies, the following process is adopted: First stop all the apertures with modellers' wax, or some other convenient material, and place the dead animal body, which may be a human corpse, in a suitable attitude, and spread over the skin, which is of a greasy nature, a layer of suitable metallic salt; pulverized nitrate of silver being used by preference. This salt then penetrates into the pores of the skin, and when a sufficient quantity of nitrate of silver has been thus applied to the body in question, by means of a brush or otherwise, it is then put into a bath of sulphate of copper, and the galvanic current being established, the whole surface soon becomes covered with a metallic deposit of copper of the requisite thickness; the result being a metallic mummy.

Similar objects, either of china or earthenware, may be covered with iron instead of copper by preparing them as above described, and plunging the said objects in a bath containing a solution of protosulphate of iron. The objects which have been thus coated with copper, may receive afterwards another coating of either silver, gold, or platinum.

This is applicable to vessels of china and earthenware, pottery, crystal, glass, and the like, and also to soft or supple surfaces, as leather, India rubber, gutta percha, and "other organic substances."

## Improved Filter or Drainer.

By Frederic Albert Gatty, Accrington, Lancashire, Eng.

These improved filters or drainers are made by preference of wood and of a square shape, but they may be of other shapes, and other materials may be used. The sides and bottom of the filter or drainer are furnished with narrow slots made with a circular saw or otherwise. When the filters or drainers are made of wood it is requisite to make the slots in a line with the grain of the wood. They may be rendered suitable for filtering different materials by increasing or diminishing the width of the slots, according to the fineness or coarseness of the substances to be separated from the liquids. In some cases the slots of these filters or drainers may be filled with animal charcoal or other purifying material. These improved filters are said to possess considerable advantages over those in general use, which are usually made of woolen or other fabric, and are soon injured by being continually wet, and by the action of acids. The improved filter, after being in operation, is easily cleaned by passing a suitable instrument through the slots, to free them from any substances adhering thereto.

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## Mining in Prussian Westphalia.

It is asserted that in Prussian Westphalia no less than sixteen mining and smelting companies have been formed since 1848—twelve of them since 1854, showing a very considerable progress. In 1853, this province produced but 603,525 cwt. of iron, and 118,064 cwt. cast iron ware, while in 1854 the product was 709,110 cwt. pig iron, and 332,061 cwt. cast iron ware, showing an increase of 73 per cent. in one year. In 1855 the province produced 1,513,039 cwt. pig iron, and 1,126,052 cwt. bar iron.

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## Tenacity of Metals.

As the results of numerous experiments in regard to the tenacity of metals, M. Baudrimont has arrived at the following conclusions: That the tenacity of metals varies with their temperature; it generally decreases, though not without exception, as the temperature rises; with silver, the tenacity diminishes more rapidly than the temperature; with copper, gold, platinum and palladium, it decreases less rapidly than the temperature; iron presents a very remarkable case; at 212 degrees its tenacity is less than at 32, but at 392 degrees it is greater than at 32.

# THE FAMILY CIRCLE.

## Scientific.

### Chemistry for the Million.

THE figures in the following tabular view denote the proportions of each ingredient and of the compound. Thus, read the first;—8 lbs. of oxygen, combined with 1 lb. of hydrogen, form 9 lbs. of water; and so the others, putting "combined with" after the first word in each line, and the word "form" after the second.

| | | |
|---|---|---|
| 8 OXYGEN | 1 HYDROGEN | 9 WATER. |

Water with other substances forms *hydrates*, as hydrates of lime, of iron, etc.

| | | |
|---|---|---|
| 16 OXYGEN | 6 CARBON | 22 CARBONIC ACID. |

Carbonic acid forms carbonates, as carbonate of lime, (chalk, marble, lime-stone,) carbonate of soda (washing soda,) bi-carbonate of soda, (cooking soda) etc.

| | | |
|---|---|---|
| 14 NITROGEN | 3 HYDROGEN | 17 AMMONIA. |

The three compounds above, water, carbonic acid, and ammonia constitute a very large part of the food of all growing plants. Nothing could grow if deprived of either of them. Decaying plants and animals are always giving them off; and living, growing plants are always receiving them.

WATER.—*Its agencies in the germination of seeds, in conveying food for the growth of plants, and in bringing them to maturity.*

Three conditions are essential to germination, air, warmth and moisture. Give to a seed that free circulation of air, which naturally takes place in a cultivated soil, and give it a genial warmth, yet without moisture it will not germinate. Most seeds can adapt themselves to various degrees of moisture. A kernel of corn, for instance, with the requisite air and warmth, will sprout and grow vigorously, whether there be much or little water in the soil. But without some moisture it will lie dormant, though ever so well supplied with air and warmth.

As soon as the germ, or minature plant, contained in the seed, begins to swell, it does so, manifestly, by receiving into itself the material for its growth. That material it receives from the seed itself. As yet it has no organs for receiving it from without. The seed is nothing else than a young plant, microscopically small, but containing all the parts it will have when grown, closely wrapped up, in a membraneous envelop, together with a convenient supply of food, to furnish material for its growth, till it can put forth roots and leaves, and draw from the soil and air.

This food, so snugly enveloped with the germ, is mostly *starch.* A little of it is *gluten,* and a very little *ablumen,* the former containing no nitrogen, the latter being a nitrogenous substance. But plants absorb no food that is not in a limpidly fluid state—perfectly dissolved either in air or water. Now starch is insoluble in water. It will form with water a kind of jelly, but not a transparent solution, and hence it can not be taken into a plant as food so long as it remains starch. That is a condition favorable to its preservation till wanted for the young plant, but before actually feeding the germ, it has to be changed into some thing that is soluble in water, and that *something* is sugar.

Every one must have noticed that when a seed sprouts, it becomes sweet. This is because the starch is turned to sugar. Out of the nitrogenous substances in the seed is formed a new substance, called *diastace.* This diastace operates upon the starch, turning it into sugar. But this change from starch to sugar can not be effected without the aid of water. If it could, nothing would be gained; for the germ could not feed and grow upon dry sugar any more than it could upon dry starch. But the sugar will dissolve in water, whereas starch is insoluble. Water, then, is essential, both as a means for the formation of sugar, and as a *solvent* for it when formed. It is not proposed here to investigate all the secrets of germination, nor to state all that is well known on the subject. Enough has been said to show the importance of water to the first step in plant growth. As soon as the germ begins to swell, it must have oxygen, hydrogen, carbon and nitrogen, and a few mineral substances, all of which are contained in the seed; but not one could find its way into the organism of the germ without the agency of water.

As with the commencement so with the continuance of plant growth, water is a most important agent, Some plants require more of it; some less. Strawberries, if the soil is porous, and made up largely of decaying vegetable matter, can hardly have too much at fruiting time; Indian corn, at the time of ripening, can hardly have too little. But whatever water each plant, at its various stages, requires, is a necessity. Not only is all plant food prepared, as in the case of the sugar made from starch, by the agency of water, and dissolved in water, but water becomes the carrier of the food, first from the soil, at short distances, to the roots, and then along the roots, and through the organism of the plant.

On the first of these points others differ from the view here taken. Liebig seems to consider that plant food is perfectly immovable in the soil, except so far as it is moved by the plow and other implements, or is seized by living roots in actual contact with the portion of soil in which it is contained. He would have it, that the roots go after food, and that is undoubtedly so. A grape root will run towards a decaying bone, when but for the bone it would have traveled in another direction; and when it approaches the bone, will divide itself into a thousand fibres, and attack the bone on every side. But while it is clear that a root will turn out of its course to come upon a richer source of food, is it not true also, that the food, by a kind of reciprocal action, is drawn towards the root?

We know that water, by a natural law, passes downward in the soil. But by another law of nature, that of capillary attraction, it will, under certain circumstances, travel upwards. For instance, if the sun evaporates the surface water, then the water below will rise to take its place. Or if you put into a moist soil a shovelful of soil that is perfectly dry, the water around and below it will travel out of its course to supply it with moisture, till it becomes about equally moist with the surrounding soil. It is evident that the movement of water in soil is downward, upward, lateral or sloping, according to various causes operating upon it, and that its tendency always is to an equal diffusion of moisture. It is evident also, that water, in passing from point to point in the soil, always holds in solution more or less of plant food. Now, while this plant food attracts the roots, it is reasonable to suppose that the roots attract it. We can hardly conceive of an attraction that is not mutual. If I give my hand to a drowning man, the pull between us tends as much to draw me into the water as to draw him out of it. So it is hard to see how the plant food can attract the roots without being attracted by them. Whatever may be the cause of the attraction, whether it is owing to different electrical states of the living root and the dead matter surrounding it, or to some other cause, it would seem that it must be reciprocal, that if the roots run after the food, the food, dissolved in water, runs after the roots, and that the place of meeting is not where either was an hour before; but at an intermediate point, a meeting half way.

Liebig seems to suppose that a root exhausts of plant food, or rather of the food specially adapted to that plant, the portion of soil immediately in contact with it, but no other. To us it seems more reasonable to suppose that water, which is known to move in all possible directions in a soil, not only tends to equalize the plant food, where no disturbing influences, as of hungry roots for instance, prevent, but also that it acts as a carrier, transferring food from every possible direction to the roots.

That water acts as a carrier along the roots and throughout the organism of the plant, there can be no doubt. Of all plants, in a growing state, by far the largest portion is water. The quantity of water that a thrifty plant passes through its organism in a day is great, often many times its own weight. Why is this? Not merely to keep its average amount of water, for then it would not be, as it is, thrown off by the leaves into the air. Its errand through the plant, from the earth to the air, is to carry up, and deposit by the way, distributing wherever wanted, what is to compose the solid parts of the future plant.

If any thing more were wanted to prove that water acts as a carrier of food to the roots, consider this: any plant, a maple tree for instance, may be regarded as a self-acting pump. A wide-spread maple, thrifty, and standing in a rich soil, on a dry day in June, pumps up from the earth a hundred gallons of water, nearly as quick as we, or any of our readers, would care to pump as much from a deep well. Ninety-nine gallons, at least, it throws, in the same time, into the air, as watery vapor—not exactly watery vapor, for then it would be seen, but water dissolved in air, a perfect solution of water in air being that state in which the air appears clear and transparent, while an imperfect solution of water in air implies that state in which the water, not being wholly dissolved, becomes visible to the eye, as clouds or fog. This may be further illustrated, by comparing it with solutions of solids in water.

Throw a bit of sugar, or salt, into a tumbler of pure water. It dissolves. Does the appearance of the water change? Not at all. It is as clear and transparent as ever. You see no sugar or salt, yet you know it is there. But it has diffused itself equally throughout the water, hidden itself away among the particles of water, and become invisible. That is what is meant by a *solution*. Let the tumbler stand a few days till the water evaporates, and the sugar will be found at the bottom.

Again, put into a tumbler of water a teaspoonful of slacked lime. Not more than a thousandth part of it will be dissolved, for lime, unlike sugar and salt, is very little soluble in water. The rest gives the water a clouded or milky appearance. This is a *mixture*. Just so, in a foggy, damp day; what we see is a mixture of air and water, the water being but partially dissolved, like the lime mixture above, whereas in a clear day, there may be quite as much water in the air, but in the latter case it is perfectly dissolved, like the sugar or salt in the tumbler, and is, therefore, invisible. It is thus that the spreading maple, through its leaves, is constantly throwing immense quantities of water invisibly into the air.

But all this water comes from the ground. The extremities of the rootlets take it in from their several locations. From other points near, water inclines to the exhausted points, flows towards, and then through the roots, and up the pores of the trees, till most of it escapes from the leaves into the air. Now, when this water enters the roots it is, undoubtedly, limpid, free from any visible particles of sand or gravel; but it holds in solution a great variety of substances, which are to constitute both the organic and the inorganic parts of the future plant, or those which burn, and those which form the ash. We say, then, that inasmuch as it is known that the water, in a cultivated field, as it enters the roots of plants, is impure (a solution of various matters,) and that when it departs from the leaves it is free from those substances, it must have brought them from the soil and deposited them for the growth of the plant. In a stalk of wheat, for example, the soluble silica is deposited as a covering for the straw, to give it firmness; the soluble phosphates, in the grain, to give it richness; and so the ammonia, the sulphur and other ingredients, to answer their various purposes, water being, in each case, the carrier of the substance to its appointed place.

One use of water in vegetation is that of washing the plant externally. The leaves and bark become clogged by substances often exuding from them, with the deposits of insects, and with dust adhering to them. A rain or a shower washes them effectually from these and other impurities. But the great and ever active agency of nature is that of dissolving, and carrying, and distributing the food, as required for the growth of the plant, and for bringing it to maturity.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## THE WEATHER.

APPEARANCE OF BIRDS, FLOWERS, ETC., IN NICHOLS, TIOGA CO., N. Y., IN SEPTEMBER, 1857.

**By R. Howell.**

*Place of Observation,* 42 *degrees North, on a Diluvial Formation, about* 40 *feet above the Susquehanna River, and* 800 *feet above tide, according to the survey of the New-York and Erie Railroad.*

| Sept. | 6 A.M. | 1 P.M. | 9 P.M. | | | REMARKS. |
|---|---|---|---|---|---|---|
| 1 | 57 | 82 | 60 | West | Cloudy. | |
| 2 | 54 | 84 | 58 | South | " | |
| 3 | 50 | 88 | 60 | N. E. | " | |
| 4 | 56 | 83 | 63 | " | " | |
| 5 | 58 | 88 | 64 | West | " | Light rain at sunrise. |
| 6 | 54 | 64 | 45 | North | " | Considerable rain before daylight. |
| 7 | 40 | 64 | 43 | " | Clear. | Small frost seen in the morning. |
| 8 | 38 | 71 | 49 | South | " | Small frost seen on the hills. |
| 9 | 41 | 79 | 58 | " | " | |
| 10 | 58 | 88 | 69 | " | " | A few forest trees begin to turn red & yellow. |
| 11 | 61 | 93 | 68 | S.&N. | Cloudy. | Hard shower at dark from north with hail. |
| 12 | 65 | 89 | 66 | South | " | |
| 13 | 66 | 81 | 62 | " | " | Light shower between 7 & 8 P.M. Corn ripe. |
| 14 | 63 | 86 | 68 | " | " | |
| 15 | 52 | 71 | 50 | North | " | |
| 16 | 41 | 73 | 55 | West | " | |
| 17 | 56 | 80 | 68 | S.&N. | " | Hard rain before daylight. Two hard showers in the afternoon. Hard rain in evening. |
| 18 | 58 | 58 | 44 | North | | |
| 19 | 45 | 50 | 48 | S.&N. | Cloudy. | Hard rain all day. |
| 20 | 49 | 61 | 49 | North | " | Quite hard rain before daylight. |
| 21 | 43 | 62 | 47 | N.&S. | " | |
| 22 | 49 | 60 | 54 | South | " | Hard rain all afternoon, commenced before 12. |
| 23 | 43 | 57 | 43 | North | " | |
| 24 | 36 | 70 | 48 | " | Clear. | |
| 25 | 41 | 72 | 51 | South | " | Leaves of forest trees turn red and yellow quite fast. |
| 26 | 43 | 82 | 51 | " | " | |
| 27 | 44 | 80 | 59 | " | Cloudy. | |
| 28 | 53 | 56 | 51 | North | " | Showery by squalls all day. |
| 29 | 37 | 51 | 34 | " | " | |
| 30 | 26 | 58 | 39 | " | " | First hard killing frost. Water in trough frozen over. Rain squalls in afternoon. |

☞ "I NEVER knew," said Lord Erskin, "a man remarkable for heroic bravery, whose very aspect was not lighted up by gentleness and humanity.

# METEOROLOGICAL.

## CHAPMAN'S PRECALCULATIONS FOR ELEMENTARY CHANGES,

SIMULTANEOUS WITH THE "MONTHLY RAINBOW AND METEOROLOGIST,"

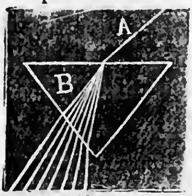
**PHILADELPHIA, PENN.**

**BY SPECIAL ARRANGEMENT WITH THE AUTHOR.**



### THEORY SIMPLIFIED.

The Natural Laws which control the changes of the Elements have their simple and positive illustration in the Solar Spectrum—as follows:




R O Y G B I V

A beam of light (A) falling obliquely upon a prism (B) or any three-square block of glass, will be divided by the refracting power of the prism, diverging into *seven* distinct and different angles of direction, (R, O, Y, G, B, V, I,) and in *each angle*, the light will assume a color of the Rainbow, and possess a nature, and produce an effect *different* from the light refracted in the *other* angles. The light diverged in the angles of the Violet, Indigo, (V, I,) etc., producing a *cool, damp* temperature, and (when converged) magnetizing bits of wire, etc., in less than an hour, whilst that diverged in the angles of the Yellow, Red, (Y, R,) etc., produces a *warm, dry* temperature, with *little or no* perceptible magnetic power.

The Rainbow gives a similar illustration by the reflection of light.

These facts have been established by the scientific world for centuries. But the *display* given on a small scale in the above illustration of the laws which regulate the changes of the elements, has been hitherto *overlooked.* For the currents of light that the earth is constantly intercepting from the other bodies of the Solar System, (some of which are a thousand times its bulk,) in *every* differing angle of reflection, can not fail to produce in its elements similar effects on a *large* scale to those produced by single rays in the *same* angles on a *small* scale, as seen in the above illustration. It will also be seen, from the mathematical exactness of the laws of light, that the *periods when* these reflected currents will be intercepted, admit of precalculation in the *same manner* as eclipses, and that their tendencies and effects may be inferred to an important extent beforehand.

I have found during some ten years' observation, that Electrical phenomena—Storms—Earthquakes, etc., have usually occurred at periods when excessive supplies of electricity by many intercepted currents were indicated. Also, that sickness—Cholera—vegetable defection, or blight, etc., usually prevail, when great and long-continued deficiency, in consequence of fewer intercepted currents of Electrical supplies to the Elements are indicated.

The changes of Atmospheric temperature, I have usually found to correspond to within the hour, with intercepted currents, as precalculated, according to the analogy of the solar spectrum, three or four times out of five.

These Precalculations, if we understand Dr. Chapman rightly, are founded on observations of electrical currents, from the heavenly bodies passing through space, and intercepted by the earth. Dr. Chapman regards light as nothing else than electricity, made manifest by passing through a transparent medium. Now, as the laws which govern the passage of light are definite, fixed and well understood, he supposes it to be possible to precalculate the position, much as eclipses are precalculated, in which the earth will be at any given time future, with regard to electrical influences, so as to foretell storms, cold, heat, winds, hurricanes, and generally those conditions in which our spirits will be buoyant or depressed, and in which health or sickness will prevail.

That he has published wonderful precalculations, as for instance the cholera at St. Jago, foretelling long beforehand almost the exact hour when that terrible visitation began its ravages, and when it suddenly ceased, is matter of history. We have long believed the science of meteorology to be of vast importance to mankind. If Dr. Chapman, by his patient investigations and his discoveries, has placed this science on its true basis, he has done a great thing for the race. We do not affirm that he has. That is more than we know. But if he shall accomplish half, or even a tenth part of what he enthusiastically hopes, in the way of helping mankind to foreknow the condition of the elements, that by sea and by land, in health and in sickness, they demean themselves accordingly, he will deserve to be enrolled among earth's greatest benefactors.

We do not understand that Dr. C. claims to have yet perfected the science to which his investigations lead. These precalculations are immensely laborious, some single problems requiring the close study of a week. In the precalculations below for the weather in November, 1857, let not the reader understand that he vouches for their exact fulfillment. What he claims, is that he has made discoveries which constitute the basis of a new science; and that this science when better understood, will enable the meteorologist to foretell the weather and its influences on the business and the health of mankind, with about the same certainty with which the astronomer foretells eclipses.

The reader, therefore, must not be disappointed if the precalculations below are not verified to the moment. If the predictions should be verified in three or four cases out of five, it should be regarded as satisfactory, because if he shall appear to be correct in only a majority of cases, it would sufficiently show he has a clue unknown to the rest of us, and afford a hope that when he and others shall have pushed these investigations further, certainty or something nearly approximating to it, will be attained in these precalculations of atmospheric conditions, affecting the great interests, agriculture, navigation, sanitary measures, etc., etc.

We bespeak for Dr. C. a candid comparison, on the part of our readers, of his precalculations with their versification or their failure, as the case may be. Read his explanations, see that you understand him, and then make great allowance for the newness of the science on which his predictions are based.

The way to treat those men who are struggling to enlarge the the boundaries of human knowledge, for the general good, is not as the world treated John Fitch and Robert Fulton, scouting the first into his grave, and withholding all honor from the second, till a brilliant success crowned his efforts, and gave us the incalculable blessing of steam navigation.

We suppose it will be understood that by R. O. Y. G. B. I. and V. are intended the Red, Orange, Yellow, Green, Blue, Indigo and Violet rays of light.

## FIRST DEPARTMENT.

### EXPLANATORY.

VISION, (*instead of being a faculty possessed and exerted at will on distant objects,*) is simply a sense of feeling excited on the nerves of the eye by currents of electricity, radiated or reflected *from the object seen.* Hence, light is idendical with *electricity,* which, hence, instead of being confined to *our earth,* is the common property of the *solar system.*

The angles of incidence and reflection are *Positive* and *Negative* angles, inducing (with other causes) a successive series of *positive and negative conditions* of the atmosphere and elements.

THE TERM POSITIVE is here given to conditions abounding *more* with *vital electricity,* inspiring *more* health, vigor, cheerfulness, and *better* feelings for business intercourse, etc., and consequently, *greater success, enjoyment, etc.*

THE TERM NEGATIVE is given to those conditions which *abound less* with electricity, and consequently *are more unfavorable* to health, feelings, business, social intercourse, etc.

¶ Indicates Sundays.

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ELEVENTH MONTH, (November.)

*Tendency.* *Time o'clock.*

1st, ¶ Negative, from 1 morn 2 to 8 eve.

2d, Mixed, from 1 to 8 morn.
Positive, from 9 morn to 12 eve.
3d, Mixed, from 2 morn to 12 eve.
4th, Negative from 2 morn to 12 eve.
5th, Negative, from 1 to 9 morn.
Positive, from 10 morn to 12 eve.
6th, Mixed, from 1 to 8 morn.
Positive, from 9 morn to 12 eve.
7th, Positive, from 1 morn to 7 eve.
8th, ¶ Mixed, from 1 morn 2 to 12 eve.
9th, Negative, from 1 to 8 morn.
Positive, from 8 morn to 12 eve.
Negative, from 1 to 11 eve.
10th, Mixed, from 1 morn to 1 eve.
Positive, from 1 to 12 eve.
11th, Negative, from 1 morn to 2 eve.
Positive, from 3 to 12 eve.
12th, Positive, from 8 morn to 6 eve.
13th, Positive, from 1 morn to 12 eve.
14th, Mixed, from 3 morn to 12 eve.
15th, ¶ Negative, from 1 morn to 4 eve.
Positive, from 5 to 12 eve.
16th, Negative, from 7 morn to 5 eve.
Positive, from 6 to 12 eve.
17th, Positive, from 1 morn to 12 eve.
18th, Mixed, from 1 morn to 10 eve.
19th, Negative, from 4 morn to 3 eve.
Positive, from 4 to 10 eve.
20th, Positive, from 4 to 9 morn.
Negative, from 10 morn to 6 eve.
21st, Mixed, from 1 to 7 morn.
Positive, from 8 morn to 12 eve.
22d, ¶ Zodiacal period ends at 3 morn.
Positive, from 1 to 6 morn.
Negative, from 7 morn to 3 eve.
Positive, from 3 to 11 eve.
23d, Negative, from 1 morn to 1 eve.
Positive, from 3 to 12 eve.
24th, Mixed, from 1 morn to 12 eve.
25th, Mixed, from 1 to 7 morn.
Positive, from 8 morn to 7 eve.
26th, Negative, from 1 to 7 morn.
Positive, from 8 morn to 8 eve.
27th, Negative, from 3 morn to 12 eve.
28th, Negative, from 1 morn to 2 eve.
Positive, from 3 to 12 eve.
29th, ¶ Negative, from 5 morn to 5 eve.
Positive, from 6 to 12 eve.
30th, Positive, 1 morn to 12 noon.
Negative, from 12 noon to 12 eve.

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## SECOND DEPARTMENT.

### EXPLANATORY.

THE CAPITAL LETTERS after morn, eve, are the initials of the colored rays, showing the angle of the solar spectrum in which the current of reflected light which produces the change is intercepted.

CURRENTS intercepted in the angles of the Y, or R, or G, rays, usually tend to a warm, dry temperature; V, or I, to cool and damp; B, and often V, to electrical, and usually more or less wind stirring; O, to variable, but in most cases to damp. *Periods* in the place of letters show currents under investigation. *Double letters,* or periods, show combined currents, operating *longer* and with *greater force.—See General Remarks.*

COMMAS (,) after the letters show positive, apostrophes, (") negative currents. *See First Department.* One comma or apostrophe shows *weaker,* two commas or apostrophes (,, ") *stronger* currents. *Hyphens* (-) show confluent currents.

The changes are four minutes *earlier* for each degree of longitude (60 miles) west. Difference of latitude in the same meridian is immaterial. The dry conditions are fair, and the damp conditions cloudy or wet, at least *three or four times out of five* in the average. *When fair,* the damp conditions diffuse *a cool, damp* sensation through the atmosphere.

*Blanks indicate very weak, or mixed, or uncertain conditions.*

¶ *Indicates Sundays.*

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ELEVENTH MONTH, (November.)

1st, ¶ At 1 morn, B" windy.
At 2 morn, I" cool, damp.
At 3 eve, O' ——
At 8 eve, Y" warm, dry.
2d, At 8 morn, GV' cool.
At 9 morn, G, warm.
At 1 eve, YI, cool, damp.
At 3 eve, O,, ——
At 12 eve, V- cool, damp.
3d, At 1 morn, G' warm.
At 2 morn, I,, cool, damp.
At 9 eve, B, wind stirring.
At 11 eve, YR" warm, dry.
4th, At 2 morn, G,, warm.
At 3 morn. .. windy.
At 10 morn, B' ——
At 5 eve, O" damp.
At 9 eve, R' warm, dry.
5th, At 9 morn, V' cool, damp.
At 1 eve, B,, wind stirring.
At 10 eve, R,, warm, dry.
At 12 eve, O, ——
6th, At 4 morn, Y,, warm, dry.
At 8 morn, G" warm, dry.
At 2 eve. ——
At 6 eve, R, warm, dry.
At 9 eve, O,, damp.
7th, At 4 morn, I- cool, damp.
At 7 eve, G, warm, dry.
At 10 eve, B" wind stirring.
8th, ¶ At 3 morn, OR' windy.
At 10 morn, V, cool.
At 11 morn, Y" warm, dry.
At 3 eve, BR" windy.
At 5 eve, BI, damp, windy.
9th, At 8 morn, V" cool, damp.

At 12 noon, B, wind stirring.
At 11 eve, G' warm.
10th, At 7 morn, R,, warm, dry.
At 1 eve, I' cool.
At 2 eve, B,, wind stirring.
At 12 eve, Y,, warm, dry.
11th, At 2 eve, R, warm, dry.
At 4 eve, V,, cool, damp.
At 5 eve, O,, ——
At 6 eve, I,, cool, damp.
At 7 eve, B' ——
12th, At 2 morn, .. warm.
At 3 morn, OV,, damp, windy.
At 7 morn, Y' warm.
At 8 morn, R, warm, dry.
At 6 eve, I, cool, damp.
At 11 eve, V' cool.
13th, At 8 morn, OI,, cool, damp, windy.
At 2 eve, .. warm.
At 5 eve, V, cool, damp.
14th, At 3 morn, G- warm, dry.
At 6 morn, I" cool, damp.
At 6 eve, .. warm.
15th, ¶ At 5 morn, R" warm, dry.
At 12 noon, GI" cool, damp, windy.
At 4 eve, O' ——
16th, At 7 morn, B- wind stirring.
At 5 eve, V" cool.
At 7 eve, I,, cool, damp.
At 8 eve, Y- warm.
At 11 eve, O,, damp.
17th, At 10 eve, GO, damp.
18th, At 2 morn, I' cool.
At 6 morn, R, warm, dry.
At 9 morn, YI" windy.
At 3 eve, ‥ warm.
At 8 eve, I, cool.
At 10 eve, R' warm, dry.
19th, At 1 morn, YB- windy.
At 4 morn, OR, warm.
At 7 morn, BV" cool, damp, windy.
At 3 eve, O" ——
At 5 eve, V, cool.
At 6 eve, G, warm.
At 10 eve, BI,, cool, windy.
20th, At 1 morn, ‥ warm.
At 4 morn, R,, warm, dry.
At 9 morn, YI,, cool, damp, windy.
At 12 noon, V' cool.
At 6 eve, B' wind stirring.
At 8 eve, G, weak.
21st, At 3 morn, · ——
At 5 eve, V,, cool.
At 7 eve, I" cool.
At 10 eve, Y,, warm, dry.
22d, ¶ At 2 morn, B,, wind stirring.
At 3 morn, end of the zodiacal period, or natural month.
At 6 morn, O,, ——
At 12 noon, G" warm.
At 3 eve, R" warm, dry.
At 11 eve, Y, warm.
23d, At 12 noon, O' ——
At 1 eve, GR" warm, dry.
At 12 eve, R, warm.
24th, At 2 morn, BO,, windy.
At 3 morn, V" cool, damp.
At 5 morn, O, ——
At 12 noon, Y" warm, dry.
At 3 eve, I, cool.
At 7 eve, B" wind stirring.
At 10 eve, R,, warm, dry.
25th, At 2 morn, G,, warm, dry.
At 7 morn, I' cool, damp.
At 10 morn, V, cool.
At 7 eve, . ——
26th, At 2 morn, R' warm.
At 7 morn, G' warm.
At 8 morn, V" cool.
At 9 morn, I,, cool, damp.
At 8 eve, Y,, warm, dry.
At 10 eve, O" ——
27th, At 2 morn, B,, wind stirring.
At 6 morn, V' cool.
28th, At 2 morn, Y' warm, dry.
At 1 eve, I" cool, damp.
At 5 eve, Y, warm, dry.
At 10 eve, B, ——
29th, ¶ At 4 morn, R- warm, dry.
At 5 eve, G" warm, dry.
At 6 eve, I, cool, damp.
30th, At 7 morn, YO,, windy.
At 10 morn, V., cool.
At 12 noon, I,, cool, damp.
At 1 eve, BI' cool, damp, windy.

## GENERAL REMARKS. (*See First Department.*)

Longer, or more prominent cool periods usually occur near combined currents, ending with V, or I, especially where the first letter is Y, as near October 28th, November 19th, or 20th.

Warm Periods usually occur near combined currents ending with R, or G, especially where the first letter is Y.

Windy, or Cloudy, or Stormy Periods, or Gusts, usually occur near combined currents which end with B, V, I, or O, in the table, as near October 23d, or 24th, 28th, November 2d, 8th, 12th or 13th, 15th, 19th or 20th, 24th, 29th.

Positive Atmospheric Conditions, or periods more prominently favorable to the general health, to the humors of the sensitive, to business, feelings, etc., near (mostly preceding for hours, sometimes days) those combined currents in the table, which are followed by commas (, ,,)

Negative Atmospheric Conditions, or periods more prominently unfavorable to the general health, the humors of the sensitive, to business and social feelings, etc., near (mostly preceding for hours, sometimes days) those combined currents which are followed by apostrophes (' ") in the table, as near October 23d, 24th, November 2d, 3d, 8th, 15th, 18th, 19th, 23d, 29th.

Habits and attachments are easier to break—infants to wean, etc., in consequence of existing physical conditions affecting the mind, from October 23d to 27th, November 17th to 25th. Harder from October 30th to November 12th.

Periods of Greater Electrical Efficiency, such as predispose more to vegetable defection or *blight*, to the Cholera, etc., November 1st to 10th.

All the combined currents predispose more to electrical disturbances, earthquakes, auroras, etc.

*Natural* tendency of the zodiacal period from October 23d to November 22d, *damp*—23 to 30th, *dry*.

# Domestic.

## How to Cook Potatoes.

A writer in the domestic department of the *Ohio Farmer*, some good housekeeper we *guess*, gives the following recipes for cooking potatoes. When we go there, may the potatoes for breakfast be cooked in the first way, and those for dinner in the second:

Potatoes Fried in Slices.—Peel large potatoes, slice them about a quarter of an inch thick, or cut them into shavings, as you would peel a lemon; dry them well in a clean cloth, and fry them in lard or dripping. Take care that the fat and frying-pan are quite clean; put it on a quick fire, and as soon as the lard boils, and is still, put in the slices of potato, and keep moving them until they are crisp; take them up, and lay them to drain on a sieve. Send them to table with a little salt sprinkled over them.

To Boil Potatoes.—Put them into a sauce-pan, with scarcely sufficient water to cover them. Directly as the skins begin to break, lift them from the fire, and as rapidly as possible pour off every drop of the water. Then place a coarse (we need not say a clean) towel over them, and return them to the fire again until they are thoroughly done and quite dry. A little salt, to taste, should have been added to the water before boiling.

## Internal Beauty.

"Handsome is that handsome does," is an old adage with truth in it. A boy, who was riding down hill on his sled, last winter, in the street, ran into a lady's dress. Springing to his feet, he expressed regret at the accident, when the lady kindly remarked, "There's no great harm done, my boy; you feel worse about it than I do."

"But your dress is ruined," said the lad. "I thought you would be very angry."

"Better have a spoiled dress than a ruffled temper," the lady replied; and as she passed on, the boy exclaimed to his companions, "Isn't she a beauty?"

"Call her a beauty?" said one of them; "she's more than forty, and has got wrinkles!"

"I don't care for that," retorted the lad; "her *soul* is handsome, any how!"

Such beauty is within every one's reach. Bad temper, too, generally disfigures the outward as well as the inward face.

Will the ladies, the boys and girls, and every body else think of this. It is so! Bad temper, petulence, ill will, every unamiable feeling indulged, hurts the face as well as the heart; kind, loving, amiable feelings, not only make people look beautiful to us, but actually go far to make them really beautiful; a heart devising good acts, while the hands execute them, makes the face and the whole form a little handsomer, while it secures for us a favorable judgment from others, and makes us look a great deal better in the eyes of our friends. What kind hearted mother is not pretty to her children. Though as homely as an untrimed hedge-fence, they would think her handsome, if no one told them to the contrary. Their eyes are deceived by a blaze of inward goodness. Happy deception! Let the homely avail themselves of it; let the handsome consider how short lived is all beauty not emanating from goodness; and so all may be handsome, if they will.—Ed.

## A Good Word for the Ladies.

Some of the papers are lecturing women upon extravagance in dress, and advising them to retrench, especially during the present financial difficulty. Doubtless there are many cases of unwarrantable extravagance in this way; but do people ever consider that two or three glasses of brandy and half a dozen regalias indulged in daily by a man, to say nothing of five and ten dollar dinners, amount to more in a year than would be required to dress a woman up to the full requirements of fashion? Much of this talk about the extravagance of women is nonsense. They are almost universally careful, and many a trader would to-day have been safe and sound if he had listened to the prudent counsels of his wife, rather than the reckless promptings of his own ambition. It is natural for men to endeavor to shift the responsibility of their folly to other shoulders, but it is rather too much to charge a commercial revulsion like this upon one's wife and daughter.—*Tribune.*

True, true, we must not make the ladies responsible for our own wrong doings. We do not believe the wives and daughters of our readers—the sensible farmers and mechanics—the only real producers, are much in fault for these hard times, but the ladies of uppertendom, and their flunkey imitators, have contributed largely to the present distress. There is no getting away from it.

## Preserving Butter.

The farmers of Aberdeen, Scotland, are said to practice the following method for curing their butter, which gives it a superiority over that of their neighbors:

Take two quarts of the best common salt, one ounce of sugar, and one of saltpetre; take one ounce of this composition for one pound of butter; work it well into the mass, and close it up for use. The butter cured with this mixture appears of rich and marrowy substances, and fine color, acquires a brittle hardness, nor tastes. Dr. Anderson says:

"I have eaten butter cured with the above composition, that has been kept for four years, and it was as sweet as at first."

It must be noted, however, that butter that is thus cured requires to stand three weeks or a month before it is used. If it is sooner opened, the salt is not sufficiently blended with it, and sometimes the coolness of the nitre will be perceived, which totally disappears afterward.

The above is worthy the attention of every dairy-woman.

## The Honeysuckles.

Of these there are several varieties, possessing various excellencies. Where the climate will permit its cultivation, nothing can be finer than the Japan or Chinese twining, but for northern gardens, it is too tender. The best plants of this family, all things considered, are the scarlet and yellow trumpet honeysuckles. They are hardy, are not infested with insects, grow fast, and bloom all summer.—*Minnesota Free Press.*

## Grasshoppers and Mormons.

Some eastern philosopher has come to the conclusion that the grasshoppers which have troubled us for a year or so past, are natives of Utah and Minnesota.

So far as the first part is concerned, we believe it. At any rate, whether natives or not, they are *regular Mormons*, and the way they go in for *polygamy* and multiplication, is proof positive that they practice the doctrines of Mormonism whether they are recognized by the "Saints" as brethren or not! The desolation left in their wake, is a very good representation of the moral desolation caused by Mormonism wherever it prevails.—*Minnesota Free Press.*

# Children's Page.

CHILDREN in years and knowledge young,
Your parents hope, your parents joy,

Here we are with you again; and do not think by the lines from the good old children's friend, that we suppose you know but little. We hope you know much, and are learning more. Is it so?

The other line is very true. You are indeed you parents hope and joy. They love you; they rejoice in your welfare; they desire your happiness; they will cling to you with fond affection, will grant your requests when they see it would be well for you, and deny them only when they think it would injure you. Now then, how should you feel and act towards them? Think of that, and you can answer just as well as we could—perhaps better.

But now we want to talk of other things; for we will not give you a discourse all on one subject this time. First of ourself. That is a favorite subject with some people, but we will be brief on this point. How do you think uncle John looks? Why, we are tall, rather shad-faced, have thin hair and a long beard, beginning to be gray. You would be afraid of us at first sight, but would soon find that we are one of those mortals that do not hurt anybody. We have got into our head a sort of an inveterate *notion,* that it is best to use everybody well, if they use us well, and if they don't. But come and see us, if your parents ever bring you to New-York.

We know just how you look, for we see you, or at least we think we do, and that answers our purpose very well. In order to prove that we see you, we will undertake to tell how you look and what you are doing now while we write, and if we tell wrong, you need not believe what we say hereafter. It is now the 28th of Oct., 9 o'clock in the morning.

There is in our family circle, among the readers of our children's page, a little flaxen-headed girl, of twelve years, with a thin face, dark blue eyes, nose inclined to the Grecian, hair straight, and half way between red and auburn, lips moderately thin, and but slightly rolled, teeth white and always clean, and whole expression intellectual, a girl, you would say, of a good deal of spirit, and yet there is something in her expression, which seems to indicate that a temper, naturally a little too high for comfort, is in process of subjugation to reason and good sense. Her manner is animated, lively, cheerful, but seldom extravagant. We said it is 9 o'clock. This little girl has been up two hours, has helped her mother considerably, had a merry chat with her father, while he was waiting a few moments for his breakfast, a pretty hearty romp with her brothers, and now, after the breakfast table is cleared off, has sat down to read awhile. She is reading the story of a good woman, whose husband was dead, her children making a good living for themselves, and leaving her much time and abundant means to look after the poor and alleviate their sufferings. Now her countenance brightens with new animation. She is thinking what she can do to relieve distress. You would almost know by her look that she is thinking a good thought, that some kind design is being formed within. It is the soul—the generous or the selfish purposes it chooses, that gives expression to the face. Ah, yes, kind intentions in the heart make one beautiful. Foul purposes give an ugly look. Now she rises, lays aside her book, runs to her mother, and asks if she may not take a loaf of bread and some of the meat that was left this morning, and carry it down to Mrs. A., under the hill, who is too feeble to go out washing, as she used to do, and whose children are sick, and they are very poor. Her mother consents, and off she goes, and her countenance beams with pleasure as she thinks how glad Mrs. A. and the children will be. The very angels would be in love with Annette, if they should meet her in this little, unpretending mission she has devised. Oh, yes, it is a kind heart, that makes a pleasant face.

There is another little girl among our readers, though it is probable she will not be long, for we rather think our ideas will not please her. She is round faced, plump, fair, with dark hair and eyes, and a fresh countenance, much handsomer, as almost everybody would say, than Annette. At 9 o'clock, Jane is just up. Her mother has just explained to her that she whishes to go and visit a friend in a neighboring town and wants her to stay at home this day and evening. But Jane has had an invitation to a party. Her mother has offered to take her to the city next week, if she will stay at home to-day. But Jane is hard to be pleased. She wants to go to the party this evening, and to go to the city next week too, and she means to have her way in both. She has been crying and has spoken crossly to her mother. From the woe-be-gone expression of her face, you would think she had lost all her friends, and never meant to smile again. But look, a sudden change comes over her. She affects to submit, very pleasantly, but it is not sincere;—she has formed the purpose to deceive her mother. She tells her, Oh, yes, you may go, and I will stay at home. But in her heart, she means to go to the party, and to bribe Bridget, the maid, not to expose her. Now, if a little girl would deceive her mother, and draw the servant girl into a falsehood to conceal it, and then should do such things habitually, what would be the consequence? Her mother would love her, for mothers love always, but would be grieved at her conduct; and very likely all others would secretly despise her. Selfishness and a lack of sincerity are not remarkably amiable qualities; at least the world does not so regard them, and it only tolerates, but does not love those who are selfish and insincere. Sooner or later they will show these traits in the face. The workings of the heart go very far to make the expression of the countenance beautiful or ugly.

If our portraits fit none of the children who read this page, you may set us down as mistaken when we think we see you; but if they fit any, you must admit that we see you through our long spectacles, and know pretty much what you are doing.

We have taken off two of the girls this month. Next month we will see if we can hit some of the boys.

## Composition.

It is worth a great deal to be able to express one's thoughts easily and naturally on paper. By practice only can it be acquired. What child of ten or twelve years old will send us an item now and then for our children's page, on the condition that we may publish it or not, as we think best, and may alter a word or two if we think that would make it better? You may send a riddle, a conundrum, a charade, or something of that sort if you choose; but we would rather have your thoughts on a subject of some consequence. If your mother or an older sister should help you a little, we warrant the composition would be none the worse, but it would be better for you to depend on yourselves. By the way, the mothers and the elder sisters should write something for our miscellaneous department, on their own account. Just tell them so from us. And the older sons, too, can occasionally give us an article that would increase the interest and usefulness of our Magazine. Only, let no one be disheartened by finding that his article does not appear. If a young man can get one article in three inserted in a journal of the character of this, he should take courage, and believe that with perseverance he will make an excellent writer. What do the farmers and mechanics' sons say to this? Will they try it?

# Book Notices, etc.

THE FARMERS AND PLANTERS' ENCYCLOPÆDIA OF RURAL AFFAIRS; embracing all the most recent discoveries in Agricultural Chemistry; adapted to the comprehension of unscientific readers; illustrated by numerous engravings of Animals, Implements, and other subjects interesting to the Agriculturist. By Cuthbert W. Johnson, Esq., F. R. S. Adapted to the United States by Gouverneur Emerson.

This is a new work, just from the press of O. A. Moore, (till of late C. M. Saxton & Co.,) 140 Fulton street, New-York, of about 1200 pages, with almost countless engravings of a high order. On another occasion we shall give it an extended notice, as it deserves. What we have to say now is, that Cuthbert W. Johnson is one of the best, if not the very best, of English writers on agriculture, and that Dr. Emerson has fully *Americanized* this most valuable work—has made the American edition every whit as good for American farmers as the English edition is for English farmers, so that the fact of the basis of the work being foreign, is rather an advantage than otherwise, as Dr. Emerson has had every opportunity, and has well improved it, of adapting it to American wants and American readers. The amount of matter it contains is about equal to ten dollar volumes, embracing nearly every thing the agriculturist wants, and so arranged that the reader can easily turn to any subject at pleasure. The price is $4. For this sum it will be sent post-paid from this office, if any one chooses to order it through us instead of the publisher.

CHAPMAN'S PRINCIPIA, OR NATURE'S FIRST PRINCIPLES; a Theory of Universal Electro-Magnetism. By L. L. Chapman. Campbell & Co., Philadelphia, Publishers. 214 pages, 12mo.

This is a little book which we have read with great interest, believing that Mr. Chapman's Theory will prove of immense benefit, if it shall be confirmed; but whether it will, we are hardly able yet to form an opinion. See article on the weather for November.

THE ATLANTIC MONTHLY, devoted to Literature, Art and Politics. November, 1857. Boston: Phillips, Sampson & Co. London: Trübner & Co. Number 1.

The first number of this new monthly has been laid, in advance, upon our table. It certainly promises well for the future, both for "true scholarship and culture," as well as for more sparkling and lively qualities. It has in its lists of contributors the very best names in the country. The articles of this number show various excellencies of a high character, and among the more prominent of these we would refer specially to a fine sketch of Douglass Jerrold, which is introductory only; Florentine Mosaics, a sketch of several of the famous European churches and pictures, etc.; Sally Parson's Duty, a very funny story of a very "curious" Yankee family; The Manchester Exhibition, an admirable criticism of this famous gallery, and one which savors strongly of Ruskin; The Autocrat of the Breakfast Table, or every one his own Boswell; British India, etc. All these are excellent of their class. We bid this new comer God's speed. It will be for sale by booksellers and periodical dealers in all cities and large villages. Price $3 a year.

ILLUSTRATED ANNUAL REGISTER OF RURAL AFFAIRS, for 1855–'6–'7, with 440 engravings. Vol. 1.

ILLUSTRATED ANNUAL REGISTER, etc., for 1858, with 130 engravings. Albany: Luther, Tucker & Son. 1858. Price 25 cents.

These two little volumes are admirable compilations, in a very condensed form, of a thousand things that every farmer and gardener ought to know. The selection of topics is made with great judgment, and the work is executed with remarkable taste. Every man who owns or cultivates even a garden, would find much that is useful to him on these pages. The Register of each year contains new matter, without repetition. Both are for sale by A. O. Moore, of this city.

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DINSMORE'S AMERICAN RAILROAD AND STEAM NAVIGATION GUIDE, for the United States, Canada, etc.

Dinsmore & Co., 9 Spruce street, have made valuable improvements upon what was good before. This little book now contains all that a traveler can ask for, short of a bound volume of Gazetteer and History combined. Indeed he gets even this, in a good measure, in this small compass. Price 25 cents.

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## Editor's Table.

FOR THE AMERICAN FARMERS' MAGAZINE.

MESSRS. EDS. P. L. & A.:—Will you be kind enough to give me, through your valuable Magazine, the *Plough, Loom and Anvil,* a few statistics about dairy farming, and answer some questions on that subject, namely:

1. Would a dairy be reasonably profitable on ordinary farms in the neighborhood of Rahway and Elizabeth, New-Jersey?

2. What number of cattle could be kept in that part of the country on, say two hundred acres?

3. Which is the most remunerative, butter or cheese?

4. What cash capital would it require to stock such a farm with cattle, stables, cheese-presses, etc?

5. And what are the most approved arrangements for these latter?

By answering these questions, and giving any other information in your power touching this subject, you will greatly oblige a subscriber. If, however, you be not sufficiently "posted," you might perhaps be able to tell me in what works I could obtain the desired information, or perhaps some of your numerous readers would be kind enough to give their views on the subject.

Very respectfully, gentlemen, your obedient servant, WM. S.

Let not the brief and imperfect reply we here make to the above deter our correspondents nor any of our readers from answering them. Farmers, let us hear from you on these questions. It is not necessary that one should answer them all, and here let us say, there are rather too many questions for one batch, but as they are sensible ones, and somewhat strongly connected with each other, we find no fault. Let some farmer answer one of them, and another another, in our Dec. number, and they will be answered well, and if the answers clash with ours, no matter, provided they are sound, for we never supposed ourselves infallible, or wished others so to regard us.

1st Question. As a general rule, the interests of both city and country would be better subserved by using the land as near great cities as Elizabeth, for growing fruits and vegetables, and that more remote for dairy purposes. Whether a dairy business there would be profitable, would depend much upon the price of the land. If land there is as high as we suppose, it could hardly be very profitable after paying labor and other expenses, unless for the production of milk.

2. Two horses, twenty horned cattle, and forty sheep, if you feed on grass and hay only, simply letting the land to grow what grass it will without help; but from two to

five times that stock, if you grow and feed corn and roots largely, thereby making the land productive in proportion to the labor and skill expended on it.

3. In that location butter, feeding the refuse to swine, and thereby making abundance of roasters and fresh pork for this market, would in our opinion be more profitable than cheese. The sale of milk would probably be more profitable than either. But if you adopt this last suggestion, let us implore you for humanity's sake to give the living babies better milk than the poor dead ones got. That couldn't keep them alive. The milk cheating in this city kills more infants than the Hindu mothers sacrifice to all their gods.

4. If you want to start off in fancy style, like a Sparrowgrass, with plenty of money earned easier than by farming, it will require more capital than you will ever get back. But a moderate beginning and a cautious procedure would require less. If you are a wise man, and will look well to the probability of a pretty speedy return for your investments, you can use, as a working capital, just about half the value of your land to great advantage.

5. This question we will leave for others to answer. It is a capital subject for an experienced dairy farmer to write upon. May we hear from some such.

OTHER QUERIES.

R. N. asks:—"Why should the animal products of a farm be of at least equal value with the vegetable products?" We suppose, of course, he would except farms near large cities, and other farms specially adapted to a specific purpose, and confine the question to the general run of mixed farming. With this limitation, a very brief answer is: Because in no other way can you *profitably* keep a farm perpetually improving in fertility. Will some one give a fuller reply for our next. It is a good question in which to develop the true philosophy, aim and end of farming.

To J. A. E.:—Yes. If you cover your manure heaps, carried to the field in autumn, with soil three or four inches thick, it will pay for the labor. Exhalations that would otherwise go into the air, will be held by the soil thrown on, and this soil, by the 10th of May, will be so impregnated as to be half as fertilizing as the manure itself.

Among the curiosities worth visiting in this city is the establishment of Thos. Otis, LeRoy & Co., 261 and 263 Water St., for the manufacture of Lead Pipe, Sheet Lead, Drop Shot, Buck Shot, Balls, &c. The necessity of a high shot-tower is dispensed with, by forcing up through passages in which the melted lead descends a stream of cold air. In the drawing of the lead pipe, and in the making of pressed balls, very beautiful and ingenious machinery is used.

A correspondent, who has often given us a spicy little article from the east, but has now removed to the far west, promises us something from that section when he becomes sufficiently posted. He says, "Thus far I am pleased with this country, but I will endeavor not to be extravagant and lavish in my praise, a common fault with writers of this section." This is a capital idea. Be discriminate, and give us something of a practical nature, instructive to agricultural readers.

C. L. Brace's request shall be attended to in our next.

N. G.'s very excellent article, the more valuable for being written so plainly, that the printer can hardly mistake, was unfortunately mislaid till too late for this number. It will appear in our next. We here take occasion to say that N. G., from whom we hope to hear occasionally, is a practical farmer, and to renew our request that more such will favor us with the results of their experience.

J. R. B., also, will appear in our next number.

## Mummy Wheat.—A Popular Error Exploded.

A few seeds of wheat, supposed to have been found in an Egyptian mummy, were some years ago, sown, and, having germinated and sprung up, led eventually to the name of mummy wheat being applied to it, as a distinct species. The circumstance led to an inquiry on the vitality of seeds in general; and a commission was appointed in England to experiment upon different kinds. A report has been made, which was brought before the British Association at its late meeting at Dublin. A register of the experiments that were made has been kept. From this, it would appear that the shortest period for which any of the seeds had retained their vitality was eight years, and the longest forty-three years. This statement at once dispels the illusion as to the mummy wheat; and most probably some substitution of other modern seeds had been made in these instances; for it was, moreover, stated at the meeting, on the discussion that took place after the reading of the report by Dr. Steele, that he had planted many seeds obtained from Egyptian mummies, but had always failed to obtain any indication of their vitality.

Not so fast, friend. It is quite possible, that there may have been a substitution of modern seed, and so the mummy wheat be all a humbug, for hardly anything is more common than humbugs these days.

It is quite possible also that 45 years is the longest that the vitality of any seeds can now be proved to have been preserved among the living.

But another thing is possible, and no mortal can disprove it, or satisfy a truly logical mind that it may not be a variety, viz.: that among the relicts of the dead, in the deep, dark catacombs of Egypt, where the temperature has hardly changed half a degree since the days of Sesostris, there may be seeds, which have changed as little as objects around, and are as vital to-day as they were 3,000 years ago.

If a seed has lain in a situation where the degree of warmth and dryness are always the same, and where the air has little or no access, it is not within the limits of human knowledge to say that its vitality may not be perfect at the end of 3,000 or that it will not be perfect at the end of 10,000, or 100,000 years, or even a longer period if you please.

## Agricultural Department of the Government.

At the dinner table of an agricultural fair *down east,* Hon. C. C. Chaffee, of Springfield, Mass., recently said:

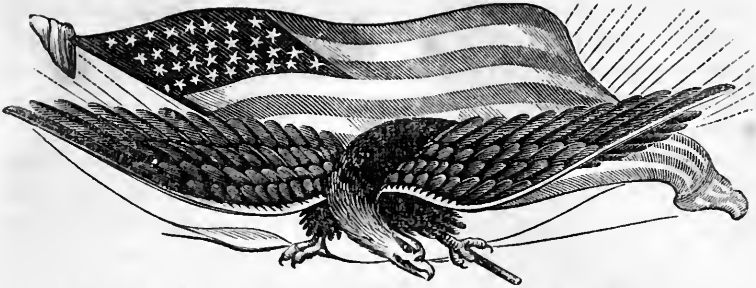
The agriculture of Massachusetts can be brought up to one hundred millions of dollars per year, and the farmers of Massachusetts owe it to themselves to see that it is done. Manufactures and commerce need but little aid; they are strong enough to go alone, but agriculture must make higher advances.* * * *

Commerce, he said, requires its $17,000,000 to protect and foster it, but agriculture is left to care for itself. The speaker urged upon the farmers the necessity of bringing the subject of an agricultural department before Congress. This great interest of our country demanded a Cabinet Officer as much and more than any other industrial pursuit in the country. If the farmers will only consolidate in their efforts and persistently besiege Congress in this behalf, their prayer would be granted.

So mote it be. But the greatest thing that Congress can do for agriculture, is to aid by means clearly within its constitutional powers, the mechanical and manufacturing industry of the country. Give the farmer plenty of home customers. That is what he wants.

## Drained vs. Wet Land.—Temperature.

In a recent report of a committee of the Royal Agricultural Society of England, upon an examination made in January last of the soil of R. Clutterbuck, Esq., of Hineworth, we find the following remark: That, whereas, the undrained land exhibited a temperature as low as thirty degrees at eighteen inches below the surface, the drained land never reached so low as the freezing point at the same depth, although the temperature of the air above was recorded at sixteen degrees below the freezing point.—*Moore's Rural New-Yorker.*




# AMERICAN FARMERS' MAGAZINE.

VOL. X. DECEMBER, 1857. No. 6.


## Hints for the Season.

HAIL, stern December! We welcome thee with gladness. Without, we fear thee not, for we are warmly clad; within, thou canst not come. We have houses to flee to, and we defy thee to enter. Thy invigorating winds will do us good—repair our health, strengthen our frame, prepare us for another summer's labors and enjoyments. But thou canst not harm us, for if thou pliest thy remedies too hardly, we shall flee thy prescriptions, or take but half the dose, as we can bear it. Come on with thy good and ill; we both love thee and we defy thee; the good we are sure of, the evil we can escape. *How happy, were all this true!*

Our neighbors, too, are all provided for—fed, clothed, housed, warmed. It is not ours to enjoy the fruits of our labor and the gifts of the Divine munificence alone, and see others suffer. No, no! We have advised kindly where kind advice would be received, and thus saved some from coming to want. Our example of industry and frugality may have influenced some favorably. We have given employment, with a liberal compensation, whenever we could, and this has resulted well for us and others. We have encouraged the falling and helped the fallen. Our foot has oftener pressed the threshold of those poorer than ourselves than of those richer. God knows, and our neighbors see that we esteem the virtuous poor more than the profligate, however rich; more than the miser, hoarding only for himself; more than the spendthrift, doing but what he will with his own; and than the mere votary of fashion, at whosesoever cost. By our love and good works we have provoked others to the like—have wrung aid from selfish, and made the Shylock charitable, (?) and there is no killing want among us? No! our own houses are warm; our children are clad; our emyloyees are comfortable; our neighbors are all doing well; our barns, sheds, folds and sties, even, give promise that not a living thing about us shall suffer. Let cold December come—we are ready; all are prepared. Would to Heaven this, or half of it, were true!

It is not yet too late to verify a portion of our dream, if we will set about it. First let us look at home. The word and providence of God affirm most significantly that we are to take care for ourselves and our own. Charity begins at home. Let it have its perfect work there. Is the house made warm, if it was not so before? Is it properly embanked, if not built (as it ought to have been) in a way to keep the cellar and lower rooms warm without embankment? Is the heating apparatus all right—so economical of fuel that you can afford to use enough and give some to the needy? Is the glass in, and the sash tight? Are the occupied rooms on the sunny side? How are the door fastenings? Let the *latch string* be in to Boreas, out to the deserving poor. Are the children ready for cold December and its colder successor—so warmly clad that they can laugh at the north wind, on their way to school, and enjoy the fun and frolic of gliding down hill and tugging up, peculiar to their happy age, and make the welkin ring, and grow hale and stout? Are the cattle so provided against the cold that they will eat the less and grow the faster? The pigs love filth, but they love a clean warm nest in a cold winter night, and will not grow half enough to pay for their feed without it. On the whole, piggy is not as unamiable a being as generally reported. For his sake and the profit, we should not leave him to suffer of a cold winter night. Are the fowls so provided with a warm retreat by night and a sunny walk by day, that with a little pulverized lime-stone to form the shell, some corn to form the yolk, and a few gravel stones in reach to grind their food in the crop, they will lay nearly all winter? Are the vegetables placed beyond the danger of frost? It is folly to let them freeze this winter and then complain of the loss next summer. Now is the time to see that they do not freeze. If they freeze, it will be your own fault and you will deserve very little pity. A cellar should be often ventilated and never suffered to become hot. If it does, the vegetables will decay and produce sickness in the family. More than half of all the fevers in all naturally healthy regions come from decaying vegetables in the cellar. The windows should be on opposite sides; should be kept open for a free current of air from March to December, and frequently opened all winter, and the temperature should be kept down as near the freezing point as it well can be without danger of going below. The few things we have hinted at will suggest a thousand others. Attend to them now, if you have not already, and may your home be a happy one for the coming winter.

But is this all? Is it enough that our own homes are prosperous and happy? "No man liveth unto himself." Such is a declaration of sacred writ, a deduction of reason, an aspiration of our better feelings. Charity *begins* at home, but does not always stay at home. God and reason, and all that is generous within us, prompt to something higher and holier than a mere selfish life. We are not independent of others. The well-to-do if well behaved are a blessing to us; as we, if kindly true, are to them. The virtuous poor make an important part of our happiness. We could hardly get along better without them, than they without us. Why should we not look after them with kindly sympathies, as stern December heralds the coming winter. Some could give employment, on terms that would hardly injure them and would be better for the poor than idleness and want; many could extend aid to such as are unable to labor, or for whom there is no employment open. If the city is a worthy example for the country in any thing, perhaps it is in its care for the poor and suffering. The nation has paid a hundred million within a few months for the handiwork of other countries, and now thirty thousand of our own people here in New-York, who desire to work out an honest living, have nothing to do. There is here as much profligacy, as much expenditure for useless show, as much hurtful extravagance as anywhere. But amid all this wrecklessness, there is charity. Some 10,000 poor are now in our charitable institutions, and we hear of no tax-payer complaining of a proper expenditure of money for their support. But our public charities are small compared with the private; and the consequence of both, we trust, will be, that few will perish here in this year of plenty with absolute want, whereas thousands would, but for men and women and children, who have hearts as well as money, and who think it not enough to live for their single selves. We are not sermonizing, but just reminding our readers that, while winter is here, many, and probably some within their reach, are ill prepared for it.—Ed.

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## Fermented or Non-fermented Manure?

Professor Voelcker states that in dung heaps under a state of fermentation, however excessive, that free ammonia is not generated except in the center of the heap, where the heat is greatest, and where it has risen from 120 to 150 degrees Fahr; and that it even then rarely escapes, except in very small quantity, as the external layers of the dung heap, where but little heat is generated, arrest and fix it in its course and endeavor to escape; that the strong smell emanating from dung heaps in a state of fermentation does not arise from the ammonia escaping, but is rather to be attributed to peculiar volatile organic combinations—to some sulphuretted and phosphorated hydrogen and a variety of other gaseous matters, amongst which ammonia as a gas is only found in very minute quantities.

Upon the other hand, the learned professor attributes the greatest injury sustained by farm-yard manure, to arise from its being exposed to the action of rain-water, especially in open yards, or after removal to the field in heaps; and to obviate this, he recommends that the manure be carted immediately to the field, and incorporated with the soil—at all times a difficult task, and at the same time frequently a slovenly mode of application—*Mark Lane Express.*

The above is expressive of the opinion of the head man, as we understand, of the Cirencester (Eng.) Agricultural college. That distinguished professor and practical farmer, whose name we will not place before our readers very often, in as much as they might not " frame to pronounce it easily," is of opinion, it seems, that barn manure is to be incorporated with the soil at once, not because it will give its fertilizing matters to the air, if fermented in heaps, but because it will be washed, if permitted to ferment, either in the yard or the field.

His opinion, on the main point, we suppose to be correct. We have no doubt that the best policy, with the mass of barn manure—perhaps all that is not surcharged with undecayed vegetable matter—is, to get it into the soil at once carting; and provided it has been properly cared for while in the yard, it will be in a pretty good condition, just at the time it is wanted. The saving of once loading and unloading is worth considering; and if plenty of cured muck, leaf mold, rotted turf &c., are brought to the barn to be incorporated with the manure as it accumulates, which we have often recommended, as a means of retaining the urine and of increasing the quantity without lowering the quality, it will be already composted, and ready for use as the spring opens. Or, if no such materials are mixed, still, if to be ploughed in, it may in most cases be about as well got into the ground by one removal, because the soil itself acts as a divisor and a retainer; and the whole field may be looked upon as a compost heap, provided it be well worked over with the plough and harrow, and the soil and manure be as evenly mixed as may be. These are some of our reasons for believing Prof. Voelcker (pronounce it if you can) to be right on the main question. The saving of labor is, in our estimation, an important consideration. American farmers can not expect, and perhaps ought not to desire, to keep the prices of food always at the high marks of the past few years. A problem of more promise to them and to all the rest of us, is, how to produce food at such a cost as will enable them to sell at reasonable prices, and still make a handsome profit, or in other-words, " to live and let live."

But Prof. V.'s (?) reasons for ploughing in green manure! Are these sound? The first we think no reason at all; and the second is ditto; because the losses sustained both by fermenting and washing may just as well as not be avoided.

First, of loss by fermentation. Prof. V. (a dodge to get rid of a hard name) says, and we presume after careful investigation, that "some sulphuretted and phosphuretted hydrogen and a variety of other gaseous matters" escape, and he admits that "ammonia" also escapes in small quantities. Now sulphur, phosphorus, and especially ammonia are too valuable to be allowed to escape, and if their escape, even in small quantities, could not be prevented, a strong objection would lie against the fermenting of manures. But for the sake of those who still adhere to the practice of fermenting their manures, by heaping them up in their field and occasionally forking them over to admit the air—a labor, we believe, that does not pay, and should not be resorted to, except in special cases, as for top-dressing, or when a compost is to be prepared for a particular crop, far from the barn, and the transportation of the muck or other materials could thereby be avoided—we will state again, as we often have done, how the loss of sulphuretted hydrogen, phosphuretted hydrogen, ammonia, and other gaseous matters, can be prevented;—mix with the fermenting manure, muck, leaf mold, decaying turf, or even soil, if you can get nothing better, in considerable quantity, say as much, or nearly as much, as there is of the manure; cover the top and sides with some one of these substances; as the fermentation proceeds, do not allow the surface to become entirely dry, even if you have to carry water to moisten it; and whatever gaseous productions the manure parts with, will be retained by the other materials. Offensive odors will not be perceived; and in the absence of these, it is safe to conclude that little or no value is escaping. By the way, the same holds true of the home premises. Foul odors about the farmstead are costly, as well as unpleasant. Let no farmer think that he is saving his manures till his entire premises are free from all offensive exhalations. Whether we of the city can afford to live in a vitiated atmosphere is not so clear, but it is quite certain that the farmer can not.

Second, of loss by washing. If the soil beneath a barn-yard is tolerably firm, and the surface of such a form that no water flows from it —a trifle lowest in the middle—little or nothing is washed away. The soluble matters of the manure may be washed into the surface of the underlying soil. But then every good farmer, in cleaning his yard, takes off a portion of the soil, because he knows it to be about as valuable as the manure itself, and supplies its place, by bringing back as much fresh soil or something better, so that little or nothing is, or can be, lost from a well regulated yard, by washing.

As for loss by rains on the heap after being placed in the field, we think there is none. Indeed we would rather have a moderate rain on a manure heap once a day than not, because it keeps the surface in just that moist condition which enables it to retain the gases generated within. It is true that rains on the shoal borders of the heap pass through and carry soluble matters into the soil, making them sometimes over rich, injuring instead of benefitting the crop. But this is the farmer's fault. He should take away some of the top soil with the manure, enough to leave the place but little richer than the average of the field, and then nothing would have been lost in consequence of rains.

We believe with Prof. V. in getting manures into the soil in pretty good season in the spring, mainly because it is the shortest and most labor-saving way, and because we believe that *economy of production* is becoming more and more an important problem with us. But for top-dressings and for other special objects, the composting of manures is and always will be resorted to, and we were desirous that our readers should understand how it may be practiced, when desirable, without these losses from fermentation and rains which Prof. V. seems to dread.

## Soot.

In England this is saved and applied to the wheat and other crops, with great returns. In this country it is too often thrown into the street and lost. About 18 bushels are a good dressing for an acre. Several salts of ammonia, magnesia, and lime render it too valuable to be wasted.

As a liquid manure for the garden, nothing is better than three or four quarts of soot dissolved in a barrel of water, and applied with a watering pot. Almost every family may as well as not preserve a few bushels of it. It is good for any kind of grain; also for roots, especially potatoes and carrots; and nothing except Peruvian guano, which it is silly to buy and at the same time throw away about as good an article, is equal to it for giving a rich bloom to flowers.

Save your soot and you may have the richest vegetables and the brightest flowers.

FOR THE AMERICAN FARMERS' MAGAZINE.

Editors of P. L. & A. :—Your monthly, which I always look for with unfeigned pleasure, has again made its appearance, and, after perusing its leading articles, I venture to address you on some few points, which, I feel assured, you or your readers can satisfactorily explain.

Hoping you will not be offended at the liberty I take upon myself, to request an answer to my queries through your valuable columns, I will proceed to state my case.

Farming, in the district in which I reside, (in the south-eastern part of Pennsylvania,) although being a celebrated agricultural country, does not offer facilities to carry it on profitably or extensively with only moderate means; good lands being worth from fifty to one hundred and twenty dollars per acre.

Now, we know land is cheap in the west; in "*Illinois*," for example, along its central R. R., (the location, I think, of the principal farming population,) and where land can be purchased for from five to twenty dollars per acre. My question amounts to this. Having a capital of several thousand dollars, would it be policy for me to emigrate to that State, buy land, break it, cultivate and farm it? Having little more than a theoretical knowledge of farming, I concluded to ask your advice as editors, or the advice of any of your western or eastern readers, and abide by the decision. G. H. P.

Nov. 15, 1857.

Our own opinion has been already pretty fully expressed; those of our eastern and of our western correspondents might differ. For ourselves we are conscious of no bias that would disqualify us for an impartial verdict.

We have thought and have said, that in our opinion, the young or middle aged man, whose capital consists in a strong arm and a resolute purpose, is a gainer by going west. We are confident that it is so as regards the northern half of the Union, and we know not why it should not be with the southern.

Those who, in addition to a strong arm and a heart to cultivate the earth, possess "a few thousand dollars," would, in our humble opinion, have to look far before they would find a more favorable location for agricultural enterprise than south-eastern Pennsylvania. We say nothing here of the opportunities, east and west, for the employment of surplus capital. Whether the east or the west is the better place for speculators we neither know nor care. It is simply of farming that we speak, and that will pay anywhere if managed with energy and sound judgment; but nowhere, if not.

Suppose an acre in Westchester county, Pa., to be worth \$115; and in Central Illinois, \$15. For the sake of the argument, suppose the acre in Illinois to be as well fenced as that in Pennsylvania, and in connection with as good buildings, and as near to churches, schools, mills, stores, mechanics' shops, and all else that is necessary and desirable.

Suppose further that the western acre is broken, and as fairly in cultivation as the eastern; what then?

There is $100 difference in the investment. Money, in the long run, is not worth, for any useful, honest purpose, over six per cent. The annual difference, then, in the cost of cultivation, allowing the acres to be equally feasible, would be six dollars, on account of difference in investment. The cost of labor for cultivating an acre east we suppose would be a dollar or two less than west; and we suppose the cost of transportation would be less, and that the chance for getting into market at the best time would be greater, and so the eastern farmer, taking one year with another, would come out quite as well as the western.

So we should reason. But what next? We, not long since, went through south-eastern Pennsylvania. We should like to know more of the farmers there. But we have seen and heard enough to satisfy us that they are happy and prosperous. The appearance of their lands, the style of their buildings, their school-houses, their churches, the books on their tables, the number and variety of the publications reaching them through the post-office, all went to convince us that their agriculture had not only made good farms, but good men, intelligent, enterprising, rich. Their condition appears to be well enough; and it may be well for them to "let well enough alone."

With the cotton and sugar plantations in warmer latitudes it may be otherwise. We do not claim to comprehend their interests as we think we do those of the northern farmers. But with the latter we are confident that farming for many years to come will pay as well on the North River, the Connecticut and the Delaware, as on the Mississippi. In both regions capital will become more and more essential. Less, perhaps, will be absolutely essential at the west; and the young man, with little but his head and hands to begin with, will sooner get under way there. We would be the last to hold him from the great and growing west.

Nor if men with abundant means choose to remove westward, have we the least objection. Western growth and prosperity are not going to impoverish the east. Wherever there is *action* there is *reaction.* If there is a railroad from the east to the west, there is one from the west to the east, and it will be well used in both directions. We are as earnestly in favor of free trade at home as we are bitterly opposed to that unwise dependence upon foreign nations for many of our necessaries and more of our luxuries, which has caused the revulsion under which we all groan, and will cause other and greater revulsions, unless the cause is removed by American legislation.

A national policy, that should encourage a development of our own resources, would check our revelry in foreign luxuries, leave us more money to pay American laborers, lift up the fallen mechanic, create a steady, enduring prosperity for the farmer, and be better for all classes, not only of our own country, but, in the long run, of every country with which we have intercourse.

We advise G. H. P. "to abide the decision" of no one but himself. "Every tub stands upon its own bottom."

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## The Sorghum.

HARTFORD, Trumbull Co., O.,
Nov. 10, 1857.

MR. EDITOR:—Among experiments on the Sorghum, some made by an enterprising gentleman in this vicinity, Mr. Geo. K. Pelton, of Vernon, in this county, may interest your readers. On the 27th and 28th of May Mr. Pelton planted about four-fifths, or, by measurement, eighty-two one hundredths of an acre, with seed obtained of Col. Peters, of Ga., and J. M. Thorburn, of N. Y., in rows four feet, and in hills two to three feet apart, cultivating the same as Indian corn. He put four kernals in a hill; more would have been better, as they did not all come up. The seed seemed alike, the products being equally sweet. The soil was upland loam, barely in good heart, having been tilled several years.

He first boiled on Sept. 22, when the cane was in bloom, and eight and one-half gallons of juice made one of molasses. Of two and one-half gallons of syrup, made Sept. 24, a small portion went to sugar.

Oct. 12.—Thirty-one selected canes that were started in a hot bed about the 1st of May, now fully ripe, weighing fifty pounds, yielded twenty-six and one-fourth pounds of juice; boiling this to four and three-fourth pounds, fully three-fourths turned to sugar, of well defined crystals. This batch was clarified with soda and sulphate of zinc. At first he used cream of lime, a tablespoonful to five gallons of juice; but he found soda better, a tablespoonful to from fifteen to thirty gallons, according to its greenness, clarifying better, and making syrup of much lighter color.

The syrup thus clarified is like honey in color, as good as sugar-house syrup, free from all tang, and on cakes no *worse* to take than maple molasses.

Oct. 15.—Ninety average main stalks, weighing one hundred and fifty pounds, yielded ninety pounds of juice, that made eleven pounds of very thick syrup. The four-fifths acre produced one hundred and fifty-two gallons of good molasses and some sugar. Now, for the cost :

| Dr. | | Cr. | |
|---|---|---|---|
| Rent of land, | $3.00 | | |
| Plowing and harrowing, | 2.00 | | |
| Three fourths pound seed, | 2.12½ | | |
| Planting and hoeing, | 5.00 | By one hundred and fifty two gallons at seventy five cents per gallon, | $114.00 |
| Seven and one-half days' boiling, including self, boy, horses and mill, | 20.62½ | Deduct cost, | 34.25 |
| Fuel, say, | 1.50 | | |
| Total cost, | $34.25 | Net gain, | $79.75 |

The pan and arch are like those for boiling maple sap. He found old rails and refuse pieces better than solid hickory; the hickory making a bed of coals beneath the pan, and choking the draught. In cool, frosty weather there is no need of hurrying, as some of his canes, after being slightly touched with the frost, were cut over a week before being crushed, yet uninjured. There is also then less juice and less green matter in it, but the sweetness is undiminished. He pours the strained juice into the pan, adds the soda dissolved in a little juice, and boils to syrup without removing it from the fire. Although not a carpenter by trade he made his own mill, except turning the rollers. Fifteen dollars cover *all expense*, allowing ample wages for his time. The mill consists of three vertical wooden rollers, sixteen inches long and fifteen in diameter, in a little frame, high enough for convenience, and the juice to drain into a large tub. The rollers may be keyed up to each other, the last two especially, perfectly tight, so that a smart blow on the keys will rebound. The driving roller has cogs at its upper end that mesh into the other rollers, and passes up through its bearing into a sweep, to which the horse or horses are hitched, like a common cider mill. He thinks it would be better to have the rollers two feet long.

Oct. 24.—Manufactured two loads of good cane, brought ten miles, and that day, with the help of a boy eleven years old, two horses, and another horse for two or three hours, he made forty gallons of good syrup, beginning a little before sunrise, and closing about 10 P. M. Another batch of ninety-two hills, averaging three stalks with their suckers, brought four miles, gave forty gallons of juice and six and one-fourth of good molasses. This stood till after a heavy frost and two freezings, one forming ice like window glass; the other froze the ground, and formed ice one-fourth inch thick. When he commenced boiling, eight and one-half gallons of juice made one of molasses; but, Oct. 24, a little less than six would do it. He has made for others, with his own, three hundred and seventy-five gallons, making to the halves, the canes being delivered at the mill; he has sold a good portion at seventy-five cents per gallon, and some even higher, making nearly $200 in about fifteen working days, and hindered some by the weather at that; for his works are in the open field.

The leaves and tops will more than pay for cutting, preparing, and delivering the canes at the mill. Mr. Pelton has persevered in his experiments in spite of the good-natured incredulity of some; but now the laugh is on the other side; at any rate, the dimes are. He is much to be commended for his enterprise.

These facts are not taken from a few hills, and multiplied into gallons and acres, but from memoranda made by him at the time. Perhaps the cane may be planted some thicker to advantage, but the Sorghum is no longer an experiment; it is a fact, and to most of us a fact full of sweetness. BENJAMIN FENN, JR., *in Ohio Cultivator.*

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Seed Corn, etc.

MESSRS. EDITORS:—I am a constant reader of your valuable Magazine, and have often felt disposed to send you an article for its columns, but have omitted it for two reasons: first, you have written upon *all* the most important points which interest the farming community, and secondly, those subjects have been described with an ability so far exceeding my own, and yet so nearly expressing my own views, that for me to write on those subjects would have subjected me to the charge of plagiarism, or an attempt to transfer your well expressed ideas into a more homely style. But in your September number I have found an editorial expression which is a little at variance with my opinion, founded on long experience, and therefore send you my views on

SAVING SEED CORN.

You may place me on the list with the "old farmer who has seen seventy summers," as quoted on page 151, and yet I have not lived long enough to see a hill of *properly* saved seed corn rot in the ground, even in the most adverse seasons.

The corn crop is destined to be the most important crop of *all* the Western States, and it becomes important that great attention should be paid to each and every part of its cultivation; it is not only for individual interest, but should be considered a mater of national concern, and I venture to assert that a want of proper information on the subject of *Saving Seed Corn*, or the neglect to follow proper instructions when given, has been accompanied with the loss of many millions by the farming community. There is, and always has been, a reluctancy on the part of mankind to acknowledge their own faults, more particlarly when they think they can by some current excuse place them elsewhere. Hence, for the two past seasons, the cry has been that the great failure of seed corn has been in consequence of the backwardness of the seasons. This is all fudge. I have planted corn in the months of April, May and June; have broken the frozen ground with my hoe to cover the seed, and yet, unless so planted as to have water stand upon it, have never lost a hill through the influence of the weather. This year I adopted an idea expressed in one of your numbers of "*going upon all fours.*" I planted early *four* kinds of corn, the hills *four* feet apart, and put *four* kernels in each hill, placing them at the corners of a square of *four* inches. By disposing them in this manner, the locality of each kernel was readily ascertained. When the corn was sufficiently grown for the first hoeing, I went over it carefully and noted if any hill lacked its number of stalks, if so, and I found several that did, I removed the earth with my fingers to ascertain the cause of failure. In *every* instance I found the kernel had germinated, but had been ate off by the white grub. I did not find a kernel of either variety that had failed to germinate, and this when many of my neighbors were complaining that the weather was such that it had rotted their seed corn.

I have experimented with corn for seed by picking it in all stages, from its boiling state until "fairly ripe." Corn that is picked when in its boiling condition will germinate sooner than than that which is picked when "fairly ripe," and with equal certainty; but I think the nourishment from the kernel to the blade is sooner exhausted than when the kernel is more perfected. The stage at which I prefer selecting my seed corn, is when it is "*fairly glazed;*" and when so selected, it will come up twenty-four hours sooner than that which is allowed to stand until "fairly ripe," and the young shoot sooner assumes a dark green color.

I have much improved several varieties of corn, by pursuing the following course, which I most approve: As soon as the corn has passed its boiling state, or become glazed, I go through the field and select the earliest ears, always preferring those where there are two ears upon one stalk; picking double the quantity, or more than I wish for seed, carrying it to the house or shed, where I husk and braid it. In doing this I select those ears which approach nearest to my desired standard, as to shape and length of ear, breadth, and depth of kernel, placing those by themselves; the others I trace up for early grinding, hanging both in a warm and airy situation. By pursuing this course, both kernel and cob become perfectly dry before the commencement of freezing weather; and if then kept in a dry room, will *never fail* of germinating, if properly planted, in almost any soil where the water is not allowed to stand so as to cover it, and seclude the circulation of air and light.

Most of the cases of failure, for the two past seasons have been where farmers cut up their corn, set it up in the field in stocks, where the ears remained damp, then on the approach of the wet season cart it to the barn or shed, pack it very closely to save room, and allow it to remain until most of out-door work is done, when it is husked out evenings and wet days, seed ears selected, braided up or thrown in a heap—and this they call *seed corn*, after it has been exposed in this damp state to an acidifying process for at least one month, then put away undried and exposed to all the severity of our winter frosts, whereby the last vestige of vitality is perfectly destroyed. Oh, shame! Better go into the open fields of the Western States where corn is allowed to stand out all winter, and select your seed corn from such ears as dropped and furnished their own covering, than from corn selected as above. N. GOODSELL.

NEW-HAVEN, Oswego Co., N. Y., Sept. 10, 1857.

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## Ten Rules to be Observed in Making Butter.

IN making good butter there are several nice operations to be gone through with, which require an eye to cleanliness, forethought and experience.

1. On milking clean, fast yet gently, regularly twice a day, depends the success of the dairyman. Bad milkers should not be tolerated in a herd; better pay double the price for good ones.
2. Straining is quite simple, but it should be borne in mind that two pans about half full each will produce a greater amount of cream than the same milk if in but one pan; the reason of this is the greater surface.
3. Scalding is quite an important feature in the way of making butter in cool weather; the cream rises much quicker, milk keeps sweet longer, the butter is of a better color, and churns in one half the time.
4. Skimming should always be done before the milk becomes loppered; otherwise much of the cream turns into whey and is lost.
5. Churning, whether by hand or otherwise should occupy fifty minutes.
6. Washing in cold soft water is one of its preserving qualities, and should be continued until it shows no color of the milk by the use of the ladle; very hard water is highly charged with lime, and must in a measure impart to it alkaline properties.
7. Salting is necessarily done with the best kind of ground salt; the quantity varies according to the state it is taken from the churn; if soft, more—if hard, less; always taking taste for the surest guide.
8. First working, after about 24 hours, is for the purpose of giving it greater compactness.

9. Second working takes place at the time of packing, and when the butter has dissolved the salt, that the brine may be worked out.

10. Packing is done with the hands or with a butter mall; and when butter is put into wooden vessels, they should be soaked two or three days in strong brine before using. After each packing cover the butter with a wet cloth, and put a layer of salt upon it; in this way the salt can easily be removed at any time, by simply taking hold of the edges of the cloth.

Butter made in this way will keep any length of time required.—*J. C. Adams, G. Farm.*

The above, which we cut from the *American Eagle*, York, Pa., contains much that is true and important. Whether the 6th item, about washing, is correct we doubt. Indeed we believe the less water is used the better, that washing injures rather than helps the keeping qualities of the butter.—Ed.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## "I'll Give So Much, and I'll Take So Much."

NO. II. I'LL TAKE.

Paul's advice to Timothy should be adhered to by every farmer. But under the present mode of doing business it is almost impossible. Let us then translate Paul's advice so that instead of reading, "Owe no man anything," read "Owe no *merchant* anything." Merchants, at the present time, as a class, have the farmers "under their thumbs;" so much so, that they say, "*I'll give so much and I'll take so much,*" and instead of the farmer setting his own price upon his grain the merchant sets it for him.

A common practice among the farming class is going to the merchant and running into "debt" for articles that might be dispensed with. Farmers, as a class, are men of moderate circumstances; their sons and daughters must be dressed in satins and silks, instead of making their own clothes, that would be of much more service than those that are "made to sell." Sons and daughters are permitted to run to the store for every thing—trinkets of all sorts. These are got upon "tick," not thinking that there is a pay-day coming. All debts must then be paid. When they go to the store they get things charged, and if the man they deal with is honest, perhaps all is right on pay-day. But perhaps when the farmer comes to settle up, his account is five dollars on every twenty-five more than is his honest due, and the farmer is none the wiser, but five dollars the poorer. "A burned child dreads the fire." Here is where the merchant has the farmer "under his thumb." If I buy a horse of neighbor B. upon "tick," I know what I have got to pay him; if the publisher sends me his paper, I know what I owe him for it; or if I buy a piece of land of Mr. C. I know what I am owing him, and can make my calculations accordingly; but where I or my family are continually going to the store, I never know how much I am owing him. I do not know whether he keeps a correct book or not. All that I have is his word. There the debt stands booked against me, and I must pay it. When pay-day comes I have not got the money. Creditor says, "Never mind; give me your note, payable twenty days from date; by that time your wheat or oats will be ready for market; then you can pay it." Twenty days roll round, and the farmer has got his grain ready for market. He goes with a load, and when he gets to town he is met by a land-shark, perhaps the one that he is in debt to. If so, he says, "I'll give you so much for that load of grain, (by the bushel,) or I want the money on that note; one or the other I must have." The farmer is in the "box," and to get out he must sell his grain for what shark offers him, for the money he has not got. Here is one reason for which the farmer is to blame. Another reason is, he should put more into his own and his children's brains, and less finery upon their backs. It is well enough to dress well, but bad policy to run into debt to a merchant for it. Better wear a plain vest and be clear of debt from the merchant, than to wear a satin one, and be in debt for it.

When the farmer goes to get a bolt of calico or muslin, a gallon of molasses, etc., the merchant does not ask the customer what he will give; but says, "I'll take so much, and that is the least that I can afford to take. It cost so much in New-York or Boston; and then the freight so much, etc., and I must have a small profit. I let you have it nearly at cost." He cares but little whether the farmer makes anything or not, but he must have a *profit* upon his goods, and a profit upon the produce he buys. When the merchant sells—"I'll take so much;" when he buys—"I'll give so much." And as long as the farmer does as described above, he is the one to blame in a great degree, for he often pays for things that he never gets, and pays the highest price for what he does get. I do not wish to be understood that all merchants are of this class, but a great many of our country merchants and city merchants will do it, for they well know that the farmer does not know how much, nor what he gets. There are honest merchants, and those I do not wish to censure. It is an admitted fact that the mercantile class have, and *take* the advantage of the laboring class. Messrs. Editors, I have censured the farming class of the community. They are to blame for doing as they do. If they give up the staff they must expect to be beaten with it. Farmers, take more pains to inform yourselves, to become on a level with other professions. Inform yourselves as regards the markets, and not be sharked out of half your earnings. It is our duty, as farmers, to bring about a reconciliation in buying and selling. I may say more about this in future.

Friends Editors, your pens are at liberty to pen what remarks you deem proper. L. S. Spencer.

Lynn, Wayne Co., Iowa.

Well, then, we will pen two remarks: 1. If the farmer buys at the store without keeping any sort of account of what or how much, some merchants, (for the honor of humanity we hope a great many,) will deal fairly with him, notwithstanding; but a great many others will yield to the temptation, and though we have no great experience in the west, we have no doubt it has its share of men who are more anxious to make money than to make it honestly. 2. If the farmer is cheated in the settlement of an account, in which the merchant only knows what or how much he has had, it is, as our correspondent says, his own fault, in part at least.—Ed.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Western Emigration.

Messrs. Editors:—Your remarks on the subject above, as elicited by the article copied from the *Yorkville* (*S. C.*) *Inquirer*, are in the main consonant with my feelings and views, and the spirit thereof I so much admire, that I needs must thank you.

The editor of the South Carolina paper in Yorkville and yourself are, no one should doubt, honest, and mean to give the very best advice. But, sirs, I am one who left the "comforts and conveniences" enjoyed by many, not far from that same Yorkville. I know what the deprivations are. And I had to know somewhat the difference between having those "comforts and conveniences" and working for them, between seeing others enjoy and enjoy myself; and I take your position, only change of cardinal points, and aver I can prove to the very letter, that "if young men will put forth as much energy and endure as many privations in the *West* as in the *East*, they will thrive as well" and accumulate fortunes.

The privations to be endured here are only for a day, whereas in the East it is "for ever and a day." Let us look to the facts of the case, and I defy a successful proof that I am in error. A young man comes out West; he is to be industrious, of course; he can, I admit, only get the same wages here that he could have procured in Carolina; his expenses are no more; when he has enough to buy property, he can buy as cheap, certainly; and when he cultivates his acres, he can make double and can sell for as much. I say he can make double, because he can buy land here at $10 or $20 per acre that will yield say 1000 pounds of cotton or 25 bushels of corn, when same price lands in Carolina will not yield the half, though it is his own fault, if he is content with that quality of land at that price.

I said "privations here were but for a day," etc. And so I repeat, of course figuratively. The idea is, if industry, energy and economy be the watchwords here, in a few years the young man will have secured a competency, and all the time on an equality with his neighbors; whereas in the older States he is very sure to remain but little better off when his grand-children are crawling upon his knees, and by that time, if ever, used to be looked down upon. The time has been here when a young man with his whole fortune, consisting of a suit of clothes, hard hands, a stout heart, and clean conscience, could in ten or fifteen years be entirely able to live easy and keep out of the sun—the great desideratum of those who know not the luxury of having *a mind to work.* An overseer at $250 per year of 1830, has his thirty hands, a farm well stocked, his rooms well carpeted, and a carriage for his wife in 1860. How many gray-haired sires and grand-sires have I known, who were industrious, frugal, and energetic, yet died without more than the means of a horse to take his old wife to the country church?

If those old countries in the South would plant less cotton at 300 pounds per acre, and at two bales per hand, and sow more grain, make more compost, plow deeper, and encourage a system of living within themselves, there would not be so much moving; (that's *true.*—Ed.) and if the new countries would learn wisdom from the past, there would be at the least a movement to this same policy, (and that too.—Ed.) If God holds man accountable for the good gifts he has bestowed upon us, there is a fearful reckoning coming on.

It is said by some people that the young bees drive the old ones off. I am not posted up as to that; but I think it right that old people should imitate birds—learn the young ones how to use their own wings—to leave all the "comforts and conveniences" of the homestead to the old folks, and go out in the world and seek their own fortunes, my young friends. A South Carolinian who has tried it.

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## Increased Fertility of Land.

Flint Ridge, Frederick Co., Va.,
November 4, 1857.

Dr. R. T. Baldwin:—*Dear Sir*—Knowing the deep interest you feel in agriculture, and especially in anything that relates to the improvement of the soil, and believing as I do that those interests would be promoted by a more frequent communication among farmers in regard to their practice and experience, must be my apology, for addressing you this communication.

About twenty years ago I determined to try what improvement I could make on a small portion of my farm by the use of clover and plaister. For the purpose of making the experiment, I selected a field of about thirteen acres, the soil of which was light and sandy. I had cleared this field, and had it in cultivation about eight years before I commenced to use clover and plaister on it; during this time it had been producing an average of about nine bushels of wheat and about twenty-seven bushels of corn to the acre. I commenced my effort to improve the soil by sowing it with about one gallon and a half of clover seed and about one hundred pounds of plaister to the acre. I soon found that the plaister acted well on the soil, producing a very heavy crop of clover, which was allowed to remain on the land, without either mowing or pasturing it off, for three years; at the end of which time it was ploughed up, in the month of March or April, when the clover was in a dry state, and planted in corn, and the next summer it was left over for stalk fallow and sowed with wheat in the fall, and again sowed with clover and plaister in the spring, and the same routine continued up to the present time: that is to say, first either two or three years in clover without pasturing or mowing any part of it off, then corn succeeded by wheat on a stalk fallow.

The result of this practice is that the product of this land was more than doubled, and is still increasing. For the last eight years it has averaged upward of twenty bushels of wheat and about forty-five bushels of corn; and last season, when the wheat crop in this section of country was remarkably light and of very poor quality, I harvested from this field twenty-four bushels of blue-stem white wheat of excellent quality, and weighing sixty-four pounds to the bushel. It may be proper to remark that no fertilizer has ever been used on this field, except the clover and plaister.

Now, whether this improvement is the effect of *shade*, or whether it is mainly attributable to the decomposition of vegetable matter in the soil, I will not attempt to decide. I merely give you a faithful statement of the mode of culture and the result, and will leave it to you and others to draw your own inferences.—James Cather, *in Winchester* (*Va.*) *Republican.*

Remarks and Queries.—That land can be thus improved is certain. But will 24 bushels of wheat and 45 of corn, once in three years, pay interest on the estimated value of the land, and pay for the labor, and leave a margin for profit? We think not. There is, however, another element to come into the calculation—the increased value of the land. Is Mr. Cather's land increasing in value? Is it coming into a state in which it will give valuable crops two years instead of one, out of the three? And for how much more would that land sell now than when this improvement was commenced? Evidently the ingredients for wheat and corn were not in the surface soil then. Has the clover brought them up, by means of its deep roots, and has it so supplied the requisite organic matter, as to make that land worth more for cultivation the next ten years, by several dollars a year, than it was ten years ago? We suppose it may be so; and if the prospective use of the land is far more valuable than the past, this is an important consideration. We wish Mr. Cather would inform us, either directly in a communication for the *Farmers' Magazine*, or through the *Winchester Republican*, what proportion of his compensation he considers he has received in the crops of wheat and corn, and what he yet expects from the improved capability of the land? Agriculture will not reach its highest point, till we learn to estimate money *in land* as well as money *in the pocket*.—ED.

## Horn Ail—Hollow Horn.

THERE is no such thing. This is our settled belief; or, at most, it is merely an incorrect name for some ailment which has no more to do with the horns than with some other parts of the body not particularly diseased. The horns are at the base exceedingly thin, as we all know; they are very good conductors of heat, and they cover a bone, the pith, which with its integumen, is exceedingly vascular, as is evinced when a horn is broken and the blood-vessels ruptured, the flow of blood is vastly greater than when any other bone is broken or bruised. Hence it is that by feeling of the horns it is easy to ascertain the general temperature of the animal—if it is feverish and heated the horns are hot; if debilitated, and its energies in a measure prostrated, the horns will not be warm as usual. Standard writers, writers on veterinary practice either deny the existence of the disease, or say not a word about it. The symptoms are those of general debility, or this as connected with some prostrating distemper.—*Homestead.*

One thing which we know about this matter is, that in our younger days we helped to hold the heads of many a struggling animal to have the horns bored; first one and then the other, to be followed by a clipping of the tail. The operation of boring the horns seemed to inflict, in most cases, severe pain. Our father, who was largely a stock grower, and was an accurate observer, and therefore less likely to be carried away with popular error than most persons, believed, in common with the whole neighborhood, that the disease called horn distemper, and known by a languid expression of the eye, an unnatural heat in the horns, and a spongy softness of the end of the tail, with loss of appetite, was best cured by boring the horns and clipping the tail. The animals so treated were those, in nine cases out of ten, at least, that had just been purchased, and that had not been previously well fed and cared for. Neglect and starvation were generally supposed to have been the cause of the disease, and the process of boring and clipping, the sure remedy. If there is no tendency in this process to cure, and we know not that there is, it certainly ought to have been discontinued more than thirty years ago. We can only say that the animals always "got well" after this application; but considering the good feed and kind care always afforded on that farm, we are not so sure but they might have recovered as soon, perhaps sooner, without it. Among the earliest maxims we were taught with regard to stock was, never to keep more than you can keep well, that it was better to commence winter with ten too few than one to many, that animals well fed and made always comfortable, seldom sicken, and invariably pay better for their feed and care than those but half fed and half cared for. If these inherited notions, ever since growing strong, are erroneous, there is danger that we shall never be right on the subject.—Ed.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## Interrogatories.

Messrs. Editors:—I should like to see the following questions answered satisfactorily, either by yourselves, or by some of your scientific correspondents.

1. Does a tree continue to grow as long as it lives? or does it, like man and other animals, attain a certain size, and then cease to grow, although it may live many years afterwards?

It is well known that the rising and descending sap, hardening, forms a ring every year, by which the age of the tree may be ascertained. Now, as long as the tree lives it puts forth leaves, which is a proof that the sap continues to flow. The question, then, is, can the sap continue to flow without forming annual rings, and thus increasing the growth of the tree?

If we follow up the analogy between animals and trees, we know that animals may be fed on nutritious diet; their stomachs may properly digest their food; all the secretions may go on regularly, and perform their proper functions, and they may live in the enjoyment of good health for many years, and yet their bodies not increase in size. May not a tree do the same? I hope some one versed in vegetable physiology will give us information on this subject.

2. On what principle depends the durability of wood? We ascribe the durability of the pine knot to the rosin in contains, which makes it capable of resisting the influences of air and moisture. Hence we might conclude that all kinds of wood that possess the property of lasting, must contain rosin, oil, or some substance that will resist atmospheric influences. But we find that this is not the case in every instance; for the locust (Robinia) seems to contain neither rosin nor

oil, and yet, perhaps, there is no wood that is more durable, either in the ground or out of it.

Nor does the durability of wood depend on the *hardness* of its fibre, or the *closeness* of its texture; for the red cedar, (Juniperus) although the texture is close, is a soft wood, and yet its durability is proverbial. The sassafras (Laurus) is both soft and porous, and yet it is very durable, either for posts or rails. The walnut, the poplar or tulip tree, the mulberry and the chestnut are all porous, and yet they last well as rails or boards.

Wood of every kind, no doubt, contains more or less essential oil, and on this, perhaps, may depend, in some measure its lasting qualities; but not to that degree which is generally supposed, for facts prove the contrary. I should like te see this subject satisfactorily explained. J. R. B.

ROSEMONT, near Nashville, Tenn.

As long as a tree lives, it grows outwardly, but may decay as fast inwardly, and even faster, so as to remain stationary, or be diminishing, in the real amount of sound living tissue.

Till an animal has reached maturity, the food supplies new tissues, more than enough to balance the wastes of the old. He grows. At maturity, the wastes of the old tissues equal the formation of new, and he ceases to grow. In old age, when the digestive and assimulating functions become less active, the wastes of the old tissues exceed the formation of new, and he diminishes in size. The same takes place, when an animal is worked severely, or when his food is scant, or if he is so far uncomfortable as to interfere with the digestion and assimulation of his food.

For instance, in the climate of New England and New-York, you may feed cattle to the top notch, yet if you give them no shelter, they will not increase in weight during the cold winter, but will diminish. New tissues will not be formed sufficiently fast to supply the wastes of the old, and the food given will be lost.

We do not claim to have answered J. R. B's. questions, but we have found a moral, which every stock grower may turn to account, and we refer the rest to our correspondents. His question on the durability of wood is important, and we hope it may receive a corresponding answer.

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## Massachusetts State Exhibition at Boston.

THE first exhibition of the kind, under the supervision of the *Board of Agriculture*, came off the last week, from the 20th to the 25th of October. It was well sustained throughout by objects of interest presented for premiums aud exhibition. There was nothing lacking except a sufficiency of people to look on. The truth is, there has been of late too many shows for the times; people had rather keep their change than spend it, when there are so few ways to obtain it. You meet three persons who have nothing to do where you find one employed.

Of all the classes of domestic animals there was a fine display, of the horse kind more than all others, and where the horse is shown, others will be but slightly noticed. Of the stock, the Devons were most abundant, and of first-rate quality. If owners' certificates are to be relied on, there were milch cows on the ground it would be hard to beat—particularly the fine herd of the veteran editor of Framingham. We have been an unbeliever in his alleged products; but still he and his maids certify, that *four quarts* of his Devon cow's milk, make a pound of butter, and we have no means of proving the contrary, excepting we have never known this done by any other herd. The cows look as well as any we have seen.

The show of agricultural implements was first rate; if farmers do not hereafter do their work in the best manner, it will not be for the want of tools fitted for the purpose.

Of plows exhibited the number was legion. There are none which suit our taste so well as the *Michigan double*, and the *Side-hill* plows. My neighbors like the side-hill because it leaves the ground so even, without any dead furrows.

How to separate the *Horse-ail* from the beneficial influences of our shows, is an inquiry not easily answered. It is very clear that this Boston Show would have been a complete failure without the *horse influence.* It came too late in the season. People do not like to stand out shivering in the cold.—*Gran. St. Farmer.*

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The following on the great snake story (as some have viewed it) about grass, is from the *Weekly Farmer*, via that excellent journal the *Homestead*, Hartford, Conn. Look, among others, at the last paragraph:

One Hundred Tons of Grass to the Acre.—A statement appeared in the *Scientific American* a short time since, taken from an English paper, setting forth that one hundred tons of grass had been grown in one season from a single acre, on land belonging to the estate of Lord Derby. Some writers took it for granted that there must be a mistake in the figures. We thought so at the time; but in reply to Mr. Joseph R. Nichols, of Haverhill, Mass., who traveled in England last summer and visited this estate, is inclined to believe that there is no mistake in the matter. He says, "My visit was made about the first of June, and they had already secured *two* heavy crops of grass, and it is not improbable that four or five more were cut during the long and favorable season of last year. Four or five crops of the heavy, stout Italian rye grass is not unusual; and Mr. Mechi, of the celebrated Triptree Farm, informed me that he had once grown *seven* crops during the summer." This grass grows with great rapidity and luxuriance under the system of irrigation adopted on many of the large estates of England, and particularly by Mr. Mechi, of applying liquid manures through pipes imbedded in the soil.

The American farmers can hardly form a remote idea of the benefits that are yet to result from science applied to farming. Land draining, trench ploughing, irrigation, liquid manuring, are agencies yet to be employed to swell the products of our leading crops to an extent now almost exceeding belief.

To render the story of Lord Derby's hundred tons of grass from one acre less improbable it should be considered that it was probably cut and weighed with the dew on, so that many tons of it so weighed would be required for one ton of dried hay.—Ed.

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## Gopher *vs.* Rat.

It is an old saying that "there's no great loss without some small gain," which is generally verified. A farmer in Alameda county, California, had a liberal supply of rats about his premises, which were guilty of their usual fecundity, and were anything but welcome sojourners. But the gophers having lately invaded his grounds, the rats had to give way, and now no trace of a rat is to be found. His boys have an amusing way of catching gophers by a string, on the end of which is a noose, which they place carefully round the hole, and when a gopher's head appears above the ground, the string is pulled, and he finds himself captured. Having secured one in this way, the boys placed him before a large rat-hole in the barn, and allowed him to go in prospecting, still retaining hold of the string, when he soon caused a commotion inside, and out ran no less than five large rats, one after another, and were quickly despatched by the boys.—*Prairie Farmer.*

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Mr. Wray thinks that Imphee, or the African sugar cane, will furnish the Northern States with means of making sugar for themselves. Several varieties of it will ripen perfectly in from 75 to 100 days. He thinks that it can be crystalized by a method which he has used, and for which he has applied for a patent in the United States, as well as in Great Britain, and some countries on the Continent. The method consists of several distinct operations. 1. Treating the juice with "cream of lime" without heat. 2. Filtering the juice through charcoal, to remove all feculence. This gives a clear, bright liquor, without any heat. 3. Heat the liquor to 120 or 180 degrees Fahrenheit, put in nut galls, and bring the liquor to the boiling point. Keep it so a few moments, then cool and filter again. 4. Evaporate the liquor in open pans, skimming the scum as it rises till the syrup is ready to grain. 5. Then remove to vessels proper for this purpose. If it should not granulate readily, throw into the concentrated syrup a few ounces of well grained sugar. This will cause it to grain rapidly. By the use of this method, Mr. W. affirms that excellent white sugar can *always* be made from the African sugar cane.

## Potatoes.

Messrs Editors:—The following article is translated from the "Farmers' Gold Mine" (*Borren Goudmyn*), a Dutch paper, and may be of interest to growers and consumers of potatoes.

"Potatoes were first brought to Europe in 1583. After fifty-nine years the potato rot broke out, and after eighty years there was no seed fit for planting to be obtained. In 1696 the Spaniards brought good seed from Peru, which gave healthy tubers for forty-five years. In 1779 the rot so far destroyed the potatoes that no good seed was obtained. In 1797 the English brought new seed to Europe, but it was not until 1802 and 3 that the seed generally spread throughout the continent and in general use. Fifty years later the rot again appeared, and decreased in 1856. From this it would appear that potatoes are liable to suffer from the disease about every fifty years."

If the above is correct, would it not be important that new seed should be imported from the native soil of the potato?—*D., in Boston Cultivator.*

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## Hints to Farmers.

Toads are the best protection of cabbage against lice. Plants when drooping are revived by a few grains of camphor. Sulphur is valuable in preserving grapes, &c., from insects. Lard never spoils if cooked enough in frying out. In feeding corn sixty pounds ground, goes as far as one hundred pounds in the kernel. Corn meal should not be ground very fine, it injures the richness of it. Turnips of small size have double the nutritious matter that large ones have. Rats and other vermin are kept away from grain by sprinkling garlic when packing the sheaves. Money expended in drying lands by draining or otherwise, will be returned with ample interest. To cure scratches on horses, wash their legs with warm soapsuds, and then with beef brine; two applications will cure the worst case.—*Ohio Farmer.*

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## The Chinese Sugar Cane.

We learn that quite a number of the farmers upon the Island have planted parcels of the "Chinese Sugar Cane" this season, but not in sufficient quantities for any practical results. Enough has been ascertained, to show that the Cane can be successfully grown in this region, and yield a good profit, provided it is entered into to an extent to warrant the erection of mills for the purpose of pressing out and manufacturing the syrup in quantities, but for merely domestic use it would hardly pay. To any individual who would take up several hundred acres of the waste lands of the Island, or a company who would enter into it with the intention of manufacturing the syrup for the market, would, no doubt, find it a profitable investment.—*Suffolk County Gazette.*

## Items and Comments.

The *American Eagle*, York, Pa., says: "A large part of our farmer's wives are overworked. What with the boarding of the farm hands, the dairy, and all the other unavoidable parts of the routine of daily work, there needs to be extra hands to do it, and when these can not be, or are not furnished, health suffers, the temper is often soured, the beauty of mind and soul is marred, and too often the worn-out mother fails to live out half her days."

The remedy it proposes is, that farmers should not so much insist upon unmarried laborers, but hire those who have families, furnish them with houses, and receive aid in their own household affairs from the wives and daughters of those who labor for them. Is not the suggestion an important one?

We venture another suggestion on our own account. It is that not half as much attention is given to facilitating the in-door as the out-door labor of the farm. Let labor-saving machinery do all it can on the land, in the barn, and *in the house* also.—Ed.

"The State Fair at Columbia, S. C., was hugely attended, and the Exhibition was very respectable. We congratulate the State Society upon the result of their second annual meeting. Col. J. T. Marshall's address on the occasion is an admirable one."—*Edgefield Advertiser.*

"Orchards.—*Low and sobby lands are wholly unfit for orchards.* By far the best lands are those somewhat elevated, gently rolling—of light porous surface, with a good clay foundation at the depth of eight or ten inches. The holes for planting trees should be from a foot to fifteen inches in depth, and two feet or more in diameter. They should then be filled half full of a light compost of stable manure, decayed leaves, stale ashes, surface earth, etc. Upon this set the roots of the tree—adding two or three inches more of the compost. Then pour in several gallons of water, which will cause this compost to settle closely around the roots. The next day, fill up the remainder of the hole with surface earth, or rich mold."

If by a "clay foundation" is intended anything heavier than a good clay loam, easily pervious to water, we think it should be underdrained.

The compost here recommended is excellent for the purpose, but the stable manure may be by far the smallest ingredient, and it should be well rotted, so as to produce no heat by fermentation after the roots are placed in or above it. Decaying bones, old shoes and boots, (to be dug in quite away from the young roots,) old woolen clothes, horns, or dust from the comb factory, would be valuable additions, as they would feed the roots years hence, when the less enduring substances will have been exhausted. There is no better way to be rid of such nuisances as old boots, bones and woolen rags, scraps of leather, etc., than to plant them where the roots of a fruit tree will find them.

We would be a little more sparing of water than is above recommended. Our experience has been, that if the soil is well moist, (about in the state in which it works most easily with the hoe or spade,) and if it is placed nicely about the roots, not one tree in a thousand will die for the want of water; and if water is to be applied, we think it should be in small quantities, and so as to reach the roots gradually and not in a drenching way. A mulching, to keep the sun off, and to procure an equal temperature is important.

Apples are now $4 a barrel in this city, and can hardly be obtained at that price. Why do not the owners of land appropriate more to the growth of fruits? There can be scarcely a doubt that the cultivation of fruits, especially of those that can be kept nearly all the year, will be profitable for many years to come; and you are guaranteed against loss, for, if there should be no other market, apples are worth the raising for cattle. No one need fear to set an orchard.—*Ed.*

"SEED OF THE CHINESE SUGAR-CANE.—A paragraph is going the rounds which states that the seed of the Chinese Sugar-cane is poisonous—that a horse died at Mobile from eating it. But what proof is there that the seeds were *poisonous?* Horses and other animals sometimes die from eating too much wheat, or other grain; but does anybody suppose that such can be called cases of poison? We shall not be likely to be troubled much with seed of the Chinese Sugar-cane in this section, till our summers are lengthened, but those who may chance to have it need not fear to use it in the same way they would broom-corn seed."—*Boston Cultivator.*

"SALE OF CHEVIOT RAMS.—According to the accounts in English and Scotch papers, the Cheviot breed of sheep is much sought after, and is spreading over sections where they have not hitherto been kept. The sale of Mr. Brydon is noticed, at which fourteen four-year-old rams brought £177 15s.—equal to an average of $63 50 per head. One sold for £27, and another for £39. At the same sale sixty-five three-year-old rams brought £720 15s.—equal to an average of $55 43 each. Sixty-six two-year-old rams brought £571 17s.—equal to $43 31 per head."—*Ex.*

"MICHIGAN AGRICULTURAL COLLEGE.—There are sixty students at this College, and arrangements are being made by which one hundred will be accommodated at the next term, to commence early in December next. The applications for admission are numerous."

"Vast tracts of land are lost to husbandry in this country, which might be reclaimed by dykes and embankments, or become fertile by drainage. Land is yet too abundant and cheap in America to admit of great expenditures in this way, except in very limited localities; but the time will no doubt come, when, in the populous portions of the country, especially in the neighborhood of large cities, the sunken marshes which now stretch along our coast will be reclaimed from the ocean, as in Holland; and thousands of acres in the interior, now given up to alder swamps and cranberry meadows, be clothed with grass and corn. There are few farms of any size in the country which do not contain waste spots of this kind—the harbor of turtles, frogs and serpents—which might be brought, at moderate expense and some hydraulic skill, into cultivation."—*E. Everett.*

We notice that the more the swamp lands in any region have been reclaimed, the more the people are convinced of its feasibility and profit. We believe it is true also that the more drain-tiles have been manufactured in any district, the more are required.—Ed.

Green Manuring.—"If, instead of having the land exposed only to the action of the atmosphere, we crop it with a plant whose roots run in every direction for food; and if, when this plant has arrived at considerable growth, we turn it into the surface-soil, we have not only enriched the latter by the elements derived from the air, but also by matters both mineral and vegetable, fetched up from the subsoil. The plant thus acts the part of collecting the nourishment for a future crop, in a way that no mechanical subsoiling or trenching could effect." —*Way.*

It has been estimated that the hay grown in 1855, was 15,000,000 tons, worth $150,000,000. The value of the pasturage is considered of equal amount, making an aggregate of $300,000,000 for the grass crop of a single year. In the Northern States, the crop is entitled to a prominence far in advance of any other. New-York leads in its production—the census of 1850 crediting her with 3,728,797 tons, annually. The importance of this crop is manifest, if we consider that the crop has probably increased since 1855 to 4,000,000 tons, worth at $10 a ton, $40,000,000, showing the hay from a single State to equal in value about three-fourths of all the gold brought into the country from California. Another inference from the above statistics is, that in the whole United States the hay crop of one year is worth the gold yield of at least five years. The value of the corn crop is the greatest of any one crop in the Union. That of the hay crop is next. Wheat is the third. Cotton is fourth in amount of annual value, but should not be compared with others without taking into view its relations to our foreign trade and our home industry. Abroad it pays our debts. At home it gives employment to thousands. Unlike corn and wheat, it is susceptible of vast increase in value after coming from the hands of the agriculturist; and if we were to add the amount of foreign indebtedness it discharges for us to the value of the goods made from it at home, the sum would certainly be large, and perhaps would exceed the value of any other one product.—Ed.

Sugar from the Chinese Cane.—The *Ellsworth American* says that Mr. Levi Foy has handed to the editor of that paper a specimen of sugar which he had made from the Chinese sugar cane grown upon his place in Hancock county. This is an important fact, as it has been doubted whether it were possible to make sugar from this cane.—*Maine Farmer.*

# Horticultural.

## Good and Bad Luck in Planting Trees.

Mr. Bateham has issued a wholesale priced Catalogue of fruit trees, &c., for sale at the Columbus Nursery, from the last page of which we copy the following:

Thousands of fruit trees are annually planted in the State of Ohio, and die before the end of the first summer. "Bad seasons" and "bad *luck*" are the common excuses of these failures; or the blame is charged to dishonest nurserymen or "rascally tree pedlars;" but seldom to the want of care and common sense on the part of the purchasers and planters, which in fact is the foundation of all the other causes.

It is true, our climate is unfavorable—the dry atmosphere and hot sun causing more evaporation from the stems and tops of newly planted trees than can be supplied by the roots, when their vitality has been nearly destroyed by transportation and exposure, or when the proportion of roots is too small for the tops, as is always the case with the *large and tall trees* so frequently sought for at the nurseries.

The way to have *good luck* in tree planting, as in other operations, is to use good sense and industry. Procure trees as near home as you can find good ones; if from a distance, send your orders direct to the nurseryman who has the most reputation at stake; choose *healthy and stocky trees, of less size and height than usual*, and take special pains to protect them from damage in transportation, then plant carefully, in good *deep* mellow soil, and with reasonable care and God's blessing, good luck will be sure.—*Ohio Cultivator.*

Provided the nurseryman sends us good trees, properly taken up and packed. The writer of the above does this, we presume, in all cases.

But the same can not be said of all his fellow craftsmen; and, though there have been great faults in the transplanting and care of young trees, yet it will not do to throw all the blame on one side; for, when the nurseryman sends us poor, miserable, death-struck trees, it is vain to try to make them live; you might as well send for the doctor after the patient is dead.—Ed.

## Forcing the Rhubarb or Pie Plant.

It sometimes happens that there is a larger quantity of stools or old roots of pie plants than the family need. When such is the case, they can be made to serve a good purpose by affording a supply in winter. By looking out in time, a few plants might always be reserved for this purpose, so that a supply would be always on hand for winter. The following manner of obtaining it, from Buist's Kitchen Gardener, may help some to a wrinkle:

"To force rhubarb, it is only necessary to procure some large pots, boxes, or half barrels, and invert them over the roots. Then cover the whole entirely, ground and all, with hot stable manure. This will cause an agreeable heat to arise; the plants will grow freely under their warm, dark covering; the stalks will be finely blanched, very tender, and delicately flavored. This operation should be performed before the ground gets frozen, by placing the boxes, &c., over the plants intended to be forced, and covering the ground with eight or ten inches of leaves or litter. Then, about the middle of January, mix with the leaves as many more, with warm dung, as will entirely cover the articles. If properly managed, the stalks will be fit for use in from four to six weeks, and the plants will continue to produce till the roots in the open air take their place."—*St. Louis Weekly Jour.*

## Cuttings of Fruit Trees.

Cuttings should be made in autumn after growth has ceased, or early in winter—they may be preserved by fastening them in a box by slats running across, and then placing the open side of the box downwards with its contents in the bottom of a pit dug for the purpose, on a dry spot of ground, and burying the whole with earth. The slats keep the cuttings from coming in contact with the earth below, and they are preserved in a proper moist condition. Or they may be packed in a slightly damp moss, in a large box, placed in a cellar. Every cutting should be cut off just above a bud at the upper end, and just below one at the lower end. Taken off closely to the old wood, with the base attached, they are more sure of growth. They should be set out in a mellow rich soil, which is to be packed or trodden closely about them as the trench is filled, and afterwards a mellow surface made by drawing on a little more earth. The length of the cutting should be eight inches to a foot, and two-thirds to nine-tenths buried. Shading the cuttings of any deciduous trees, is of little or no advantage, but it is important to keep the ground uniformly moist; if this is done by watering, the surface should be preserved from crusting or cracking by mulch. This is the mode of raising quince trees, currant and goose-berry bushes, grapes, &c., but will not do for the larger fruits generally, in the Northern States—it is cheaper to bud and graft, than to procure the few which may be obtained among many failures in this way.—*Hightstown Excelsior.*

## Notes for Farmers.

Chinese sugar cane syrup was sold in Wheeling, a few days since, at fifty cents per gallon.

In Wisconsin and Illinois corn standing in the field is offered at an average of ten cents a bushel.

Atilla Burlingame, a farmer of Cortlandt county, New-York, says wheat can be prevented from spoiling in bins if one dry brick is put in with every five bushels.

Messrs. Tavenner & Nesmith got a premium at the Loudoun county fair for the best three-horse plough on exhibition. Messrs. Steer & Schooley's wheat and guano drill attracted favorable attention.

The Chicago *Tribune* says the knowing ones of that region are prophesying a mild winter, because the corn husks are remarkably thin; considered a sure sign in the rural districts that the winter will not be severe.

The *Advocate* says that thousands of bushels of corn have been sold in Tazewell county, in the last few weeks, at twenty cents per bushel, to be used for fattening hogs. Flour is selling in East Tennessee at two dollars per hundred pounds.—*Ex.*

## The First Apple in Nebraska.

Judge J. W. Hall of this county, has presented us with an apple grown on his farm, five miles north-west from this city. This is the first apple grown in Nemaha county, and for aught we know in the Territory. It is a beautiful specimen both in appearance and taste; a bright yellow, medium size, and slightly sweet, rich and juicy; was grown upon a tree planted one year ago the past spring. The early production of this tree is evidence of the adaptation of the Nebraska soil to the growth of fruit.—*Ohio Cultivator.*

## Keeping Celery.

Celery must be taken up before hard frost sets in, and stood nearly upright in mold in the cellar, or it will be utterly spoiled and lost. Or it may be readily preserved in trenches in the open ground, if in a perfectly dry spot and covered over well with soil. The method is as follows: Have all the celery taken up with the roots, and pull off a few of the loose and decaying stalks from the outside. Select a dry spot, stretch down the line and mark off a space twelve or eighteen inches wide, and as long as needed. Take out this breadth of soil nearly to the depth of the celery, and lay on each side. Stand the celery on the bottom as thickly as possible. Lay some short boards at intervals across the trenches as supports to other boards placed lengthwise, which are to cover the trench entirely. Pile over the soil taken out, throw over some litter or dung, and it will keep perfectly, and blanch as white as snow. It keeps best if it has not previously been much earthed up.—*Emery's Journal of Agriculture.*

## Southern Fruit Raising.

There is no branch of domestic economy more neglected at the South than the culture of fruit. It is true, there is an awakened spirit among the few, but as yet, not among the masses. The grape is exciting a universal interest, not so much for the dessert as for wine. The nurseries and extensive fruit orchards springing up in the vicinity of our commercial towns, which are a credit to the country, and a source of profit to the proprietors. But this is not all the country needs. Every proprietor in the country—every owner of a half acre lot, owes to himself, his children and his country, to plant fruit trees. Land holders of the South! cancel the debt you owe to posterity this fall.

Say not that your soil does not suit the apple, pear, peach or grape, for on a small scale you may make a soil to suit any of them. This is the great advantage you have over them who never read. You may all grow peaches as well as Moses, or cherries as well as Peters, or strawberries as well as Peabody, or grapes as well as Axt, if you will but study how to do it. The smallest farmer among you thinks it no labor lost, or time misspent, to study how he may best fatten his pig. He does not think of building a pen for his pig, and then feeding him on shucks and water, but he studies out and experiments with that food which will produce the greatest amount of pork.

Now if we will divest ourselves of the erroneous idea that fruit is but an article of luxury and not of food, and look at it in the true light in which God designed it, we shall find it as much to our interest to study what will feed a fruit tree, as what will feed a hog. There can be no excuse for any family being without fruit. There are reliable nurseries all around us. The fig and grape grow so rapidly from the cuttings, and the apple and peach from seeds, that any family, no matter how poor, may have an orchard.

Our mission is, to encourage the production of good fruit among the masses, and when we see every householder in the land sitting under his own vine and fig-tree, we shall feel that we have accomplished our mission.—*Cotton Planter.*

This advice is given to the South, but is good for North, East and West. Let all cultivate fruits adapted to their climate, and have enough of it.—Ed.

## Large Bunch of Grapes.

Dr. Durfee, of Fall River, has in his green house a bunch of grapes estimated to weigh fifteen pounds, measuring one foot and five inches in length. Such a bunch of grapes, we presume, never grew in this country before.

## Fall Transplanting.

As many persons, either through preference or necessity, plant fruits and ornamental trees and shrubs in the fall, we would advise them to do it properly. When a tree is carelessly or unskilfully planted in autumn, the high winds and frost often entirely destroy it. If the hole which is dug to receive the roots is small, and the roots are crumpled and confined, or, what is even worse, grubbed short in the act of digging up, the wind will be sure to blow the tree down, or at least give it an awkward inclination; and the frost will, if severe, destroy the small amount of vitality left. Dig, therefore, large and deep holes; have the soil well drained and properly enriched; lay a good stratum of rich soil at the bottom of the hole, and spread the roots of your tree thereon evenly and naturally; fill in carefully, leaving no empty space between the roots, and there is no danger that your tree will be uprooted by any ordinary blast.—*Freeport Weekly Journal.*

The hardier fruit trees, such as apples, especially, may be transplanted nearly as well in the fall as in the spring. It is not yet too late. A tree may be transplanted any time before the ground freezes. If the work is done as late as this, then is there more need of staking up, to guard against their being blown about after winter thaws.—Ed.

## To Prevent Girdling of Trees.

Great injury is done to young orchards in some districts by the *meadow mouse.* This little animal always works *under cover*, and therefore does its mischief in winter when the snow lies deeply upon the ground. A common and effectual mode of deterring it is that of treading down the snow firmly about the stem directly after every fall of snow. But this is a very troublesome affair.

The following mixture will be found to be an effectual prevention. Take one spadeful of hot slaked lime, one do. of clean cow's dung, half do. soot, one handful of flowers of sulphur, mix the whole together with the addition of sufficient water to bring it to the consistency of thick paint. At the approach of winter paint the trunks of the trees sufficiently high to be beyond the reach of these vermin.

English nurserymen are in the habit of protecting nurseries of *small trees* from the attacks of *rabbits*, simply by distributing through the squares of the nursery coarse matches made by dipping bunches of rags, or bits of tow, in melted sulphur, and fastening these in split stakes a couple of feet high. The latter are stuck into the ground, among the trees, at from 12 to 20 feet apart, and are said completely to answer the purpose.—*Ex.*

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Place a bone in the earth, near the root of a grape, and the vine will send out a leading root directly to the bone. In its passage, it will put out no fibres; but when it reaches the bone, the root will entirely cover it with the most delicate fibres, like lace, each one seeking a pore of the bone. On this bone, the vine will continue to feed as long as any nutriment remains to be exhausted.—*Farmers' Cabinet.*

# MECHANICS' GUIDE.

## Recent American Inventions.

### The Influence of the Fine Arts upon the Mechanic and the Masses.

A CAREFUL observation will convince any inquirer, that the cultivation of the fine arts is of great benefit to the working classes. The present condition of affairs shows beyond dispute, that, under existing circumstances, the interruption of those great plans which the rich are constantly carrying out for their own profit or pleasure, are the substantial support and only dependence of thousands. Many are in the habit of speaking of wealth and luxury as of something that places their possessors in opposition to the poor. The reverse is true. If any are in hostile attitude, it is the poor and dependent towards the poor and dependent. Wealth, on the the other hand, is the electric power which binds together the extremes of society, and gives motion to the machinery of industry. The poor man is not dependent on his poor neighbor. These are often in each other's way. The rich man needs the poor, and as much as the poor needs the rich. Together, they form a system, a circuit, which keeps the whole in healthful motion. Let some demon finger disturb these connections, taking from the rich the power to indulge in "luxury," and the poor drop at once, like the armature of a spoilt magnet, and become isolated, powerless, helpless. Wall street and splendid avenues are essential to the comfort of the poor.

It may be urged that this is the result of an unhealthy and abnormal state of things, that we have foolishly gone up in a balloon which has burst, and collapsed, and left us to fall to the ground together; that we aspired too high. But, still, we must prescribe for the patient from actual symptoms, and not from those we should be pleased to discover. "Junior" as we are, we have lived long enough to see the folly of attempting reforms, moral or physical, by any theoretic nostrum, which has not specific reference to all the actual conditions of the patient, and without much reference to what we *ought* to find, had he been or done something else. Should the wives and daughters of the rich manage their own households, becoming "producers" instead of "consumers," thousands, now cared for, would not know where to find a home, and should those who devote themselves successfully to the fine arts change the sphere of their labor, they would often encroach upon the ground now occupied by some humbler aspirant. But we would take a higher view of the subject. The masses are more profited, as men, by the successful culture of the fine arts, than are the artists themselves. These last are already educated to love beauty, and to discover it, and even to create it, while with a multitude there is no other practical way of opening their eyes to the existence of beauty, and the attractions of refinement, but by witnessing these exhibitions offered to them by others. It is true, some benevolent teacher might take them out to a lofty eminence, and point out the beauty of the scene, and thus teach them how to discover it by themselves. But who does it? Who will do it? We are here brought back to the actual and not to the theoretic possible. It is the hour or the evening spent before a fine picture, or in a gallery of paintings, that often opens the eyes

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of those living in attics or in the wretched apartments of our crowded streets, destitute of all tasteful attractions, to a sense of what beauty is, and to a consciousness that loving and cherishing the beautiful is a personal advantage. We are glad to see the crowds which always surround the windows of our print shops, absorbing, as it were, the valuable influence which emanates from beauty and skill. Elegant buildings, tasteful dresses, and polished manners, though seen in the streets, produce an immense effect on the popular mind and heart. Our own little parks are of inestimable value, not as cool retreats, but as educators of infancy and childhood.

Thus we hail as a great moral storehouse, a good picture gallery. There is a mine of uncounted worth in the hall of the Dusseldorf, and that more neglected, but rich array, the Bryan Gallery. And now we have missionaries from Great Britain and France, holding up to our view the highest conceptions of genius, made real in the highest possible degree, by years of patient effort. The gallery of British art, and the gallery of French art, now on exhibition in this city, we welcome not only as sources of enjoyment to the amateur, but as public instructors. If our city government would expend a thousand or two dollars to secure the admission to all these galleries of those who can not afford to pay, and who, perhaps, are "unemployed," it might save many a stormy hour on Tompkin's Square and in the City Hall Park, and those who are suffering would bear their privations with a kinder if not with a firmer heart. But this is not our expectation, for the millenium has not yet come. There are, however, distant indications of its approach. Our friends in England have brought up the miners and their families, buried for years beyond the reach of sunshine, and have shown them the splendid Gallery of the Manchester Art Union, so ably described in the first numbers of the *Atlantic Monthly.* Let them now give them *homes* above ground, and show them the beauty that is free to all who have eyes to see. The two methods combined can not fail of happy results. We have no reason to despair, but rather for constant, earnest, persevering labor in behalf of humanity.

## Recent Patents.

We have been accustomed, of late, to give short descriptions of patents recently issued, in the "List of Patents." But we have reason to believe that some of our readers find it inconvenient to run over so large a surface to find what they seek. Hence we have thought it wise to arrange these descriptions in a chapter by themselves. We confine these items to those patents which are valuable and at the same time easily understood without diagrams. This latter condition excludes many which we would be glad to present more fully. When diagrams are sent us, we give them a separate title and place.

## Water Cooling Pitcher.

Alonzo Hebbard has secured a patent for "the combination of the woolen cloth or felt covering as an elastic, non-conducting packing for a porcelain or glazed ware pitcher, with the said porcelain or glazed ware interior pitcher, and external metallic shell or pitcher, for the purpose of making a water-cooling pitcher."

## Portable Furnace, Expanding Tires.

Samuel Pentherby, Chicago, Ill., has devised a portable furnace for expanding tires of locomotives and other carriages, while on their axles or shafts, and connected with their vehicles or locomotives.

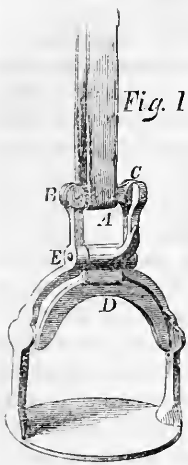
## Neil's Safety Stirrup.

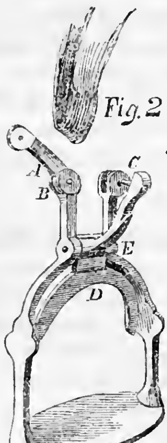
Fig. 1 is a view of the stirrup attached to the stirrup-strap when used for riding.

Fig. 2 is a view of the same when *detached* from the strap.

Both of these are front views. The whole contrivance is extremely simple, and may be thus described.

The lever or extension piece, D D F, is made to work easily at the joints, E E. The end F, is provided with a pin C, which works freely through a hole in the upper end of the stirrup, and holds the end of the cross bar, A, firmly in its place in the slot. The piece D D, projects slightly in front, and is kept *out*, and the pin C, consequently *in*, by the spiral spring which is coiled round the pin which goes through the hinge joint, E E. This spring is hidden.




The action of the invention is this: As long as the rider is on horseback, the stirrup remains secure, and can not be detached by any movement of the foot; but if the rider is thrown, and the foot remains fastened, instead of being dragged to pieces, as is the case when other stirrups are used, the fallen person is instantly and with certainty liberated, because, in being dragged, some part of the foot necessarily presses against the piece D, and this draws out the pin C, and liberates one end of the cross piece A, and the whole stirrup falls from the strap along with the rider's foot. The same will be the case if the *whole foot* is through. This appears to be valuable, not only for common, but for army use. It was patented in England in October. Preparations are being made to supply the market as soon as possible. For particulars, address the inventor and patentee, Dr. James Neil, Yorkville, N. Y.

## Fastening for Metallic Bands for Cotton Bales, &c.

Wm. Minor, Houma, La., has obtained a patent for securing the ends of metallic bale hoops, by cutting loops, or eyes, or parallel slits through them, and bending outward the intervening portions, the loops overlapping each other as the ends of the hoops are overlapped, and a transverse wedge or key is passed through the loops.

### Cultivator.

Nicholas Whitehall, Rob Roy, Ind., (assignor,) has invented a double cultivator, the middle of which is elevated to pass over the corn, with a compound evener, suspended upon three points.

### Making Iron Spoons.

E. Y. Mix, Wallingford, Conn., has secured a patent by which the rivet or pin which secures the handle and bowl of the spoon together is formed on the handle at the same time and of the same piece of metal, by the same die which gives form to the handle.

Russel B. Perkins, Meriden, Ct., has secured another mode of effecting this attachment. The bowl is formed, with the tongue at the end of the handle, with a cavity fitted to receive it, and the two, placed together, are then united.

### Mowing Machine.

John P. Manny, Rockford, Ill., has patented the mode of "suspending, elevating and lowering the cutting bar of mowing machines, in a horizontal position, by means of flexible connections, as cords or chains, attached to each of its ends, where the same are arranged in relation to, and used in combination with independent rigid frames, substantially in the manner and for the purposes described."

### Preparing Fats for Candle Making.

Mr. M. W. Brown, of Buffalo, has patented a process for preparing fats for candle making, which seems worthy of notice, though it may be too complicate for housewives generally to undertake it. It consists of four points. First, the employment of a soluble soap, as a base upon which to work his process for converting the same into stearic acid candles. Second, the application and use of the sulphate of soda and its equivalent corresponding salts in admixture with soluble soap, before a decomposition or change of the soluble soap into fatty acids. Third, the application and use of dilute sulphuric acid, or its equivalent, in admixture with soluble or detergent soap, for the purpose of decomposing or changing the soluble soap into fatty acids. Fourth, the use of spirits of turpentine, camphene or burning fluid, in admixture with the fatty acids while in the liquid state before and preparatory to the expression of the oleic acid oil therefrom by pressure.

### Crossman's Patent Rudder.

Mr. A. B. Crossman, of Huntington, N. Y., has contrived and secured a patent for an improvement upon the rudder, which is highly commended by nautical men. It consists of a broad, oval-shaped double plate, or "extension piece," partly embracing the lower part of the rudder, and turning upon a pivot running through it. A chain leads from the hinder and lower part of this extension piece to the quarter deck. When this swinging extension piece hangs downward, it so enlarges the surface of the rudder, as greatly to increase the facility of steering a vessel. When the water is too shallow for the use of this addition, by drawing upon the chain, the "extension piece" is lifted up so that the whole of it is above the bottom part of the keel proper. The shape of the extension piece and its proper point of suspension are determined by careful experiments, and such results have been secured that a mere child can easily steer a vessel of almost any description. It may be graduated to any desired amount of pressure upon the tiller.

### Hanson's Self-acting Water Engine and Meter.

We were gratified the other day by an examination of this pump and meter. It is "self-acting," since it may be so set as to stop at any given pressure, so that when the reservoir is full, its action will cease, and when the removal of this counter pressure, by the consumption of the water, is effected, the engine commences again of its own accord.

### Hydraulic Ram.

Mr. Hanson has also improved the design of this curious little worker. He uses this ram in connection with the meter, or it may be used separately. The improvement consists in the substitution of a light leather valve, in place of the clappers, before used. In the old form the surface pressed upon within the air chamber is about twice that below. In this both are alike. Hence the leather collapses with a very slight pressure. It will endure a long while, as it frees itself from gravel, etc., at every stroke. This leather is seen in the engraving, bent up at the circumference, resting up a stirrup and fastened by a nut upon the central screw. The amount of the flow is also easily regulated by a lever operation, quite prominent in the engraving.

### Rotary Excavator.

Gilbert H. Moore, Rochester, N. Y., has patented "a carrier or receiver," on which the support and hinging of the bodies upon the axle is so arranged that they may be dumped by elevating the two extremities.

### Folding Iron Bedstead with Sides.

Mr. Vandenhove, of New-York, has patented a folding iron bedstead, with side pieces and other "improvements."

### Self-Dumping Car.

Le Butt, of Lincolnton, N. C., has secured a patent for a self-dumping truck, an "adjustable self-inclined plane, with ropes, pulleys, etc., forming an improved horse-run."

### Process of Coating Iron.

Mr. E. G. Pomeroy, Philadelphia, has secured a patent for "the practical use and application of the described solution of hydrated sulphate of iron and copper brought in contact with the surface of the iron, in conjunction with the heat of the melted metal in the bath described, thereby producing a molecular separation of the particles of the iron, giving to them the susceptibility of forming a perfect flowing union or fusion together with the aforesaid metals in the bath in such a substantial manner as entirely to exclude a galvanic cement between the iron and the surrounding alloys, or any other or either of them.

## Amalgamation of Precious Metals.

J. A. Bertola, assignor, etc., of New-York, has a patent for a machine for "effecting the complete amalgamation of precious metals from ores containing such metals, consisting of a double concave muller with grooved bottom, extending diametrically from side to side of the tub, leaving spaces or chambers on each side of it, and revolving in said tub upon a central and vertical axis."

## Nail Machine.

J. S. King, Raynham, Mass., secures a claim for pointing a cut nail or a spike immediately after it has been severed from the nail plate, by a peculiar mode of compression.

## Shade for Lamps.

Wm. Kemble, of New-York, and associate, have contrived and secured a patent for a light shade, so constructed that all rays shall fall perpendicularly upon the receiving surfaces, by which the rays may be made to deviate in any given direction.

## Apple Slicer.

Nathaniel Thomas, East Dixfield, Me., has patented an arrangement of two straight knives, placed radially within a tube, the apple rotating between them.

## Manufacture of Seamless Felt Garments.

The patent of Messrs. Eitchell & Badger, of Matteawan, N. Y., is thus set forth: " First cutting the original portion or portions of a seamless article of clothing from a hardened bat, and then so perfectly uniting the edges of the said portion or portions, with each, by felting, that the article thus formed will be of a uniform thickness in every part, and will be of so tenacious a texture, that they will retain their original shape during the ultimate condensing operation of the fulling mill, all substantially as set forth."

## Brushing Rice.

Oliver I. Butts, Georgetown, S. C., has secured a patent for the application of a flat brush for brushing rice, consisting of a flat runner, dressed with sheepskins and bazils, in connection with a wire bed.

## Rotary Exhaust Regulator for Locomotives.

E. R. Addison, Baltimore, Md., has secured a patent for a regulator, consisting of variable series of openings in a revolving skeleton wheel, moved by gearing from the outside of the locomotive steam boiler. A close case excludes the ashes from the wheel, which would interfere with its complete action.

## Machine for Bending Wood.

C. F. Beverly, Lancaster, O., has patented a machine for bending wood by pressure, for making felloes of wheels, and similar purposes. A lever presses the wood against the mold, and other machinery confines it in its place.

## Harvester.

N. S. Patterson, Kingston, Tenn., has patented a movable double-tree, to which the horses are attached, by which the harvester is easily turned and managed.

## Improved Plow.

J. A. Lash, Carlisle, Pa., has secured a patent for the use of a "long, flat and straight spring, on the top of the beam, in connection with the draught rod, and an elbow lever, for preventing the shock to the plow and to the team, when the plow strikes against a rock."

## Manufacture of Cotton Yarns.

S. C. Lister and J. Warburton, of England, have secured the right to improvement in the method of manufacturing cotton yarn, which consists in wetting the cotton roving previous to its being drawn, or drawing and spinning it while in a wet state. The mode of wetting the cotton is also covered by the patent. This was patented in England in 1855.

## Steam Boiler.

Wm. Geo. Norris, of Philadelphia, has secured a patent for a *closed* chamber between the fire-box and tube sheet, for the purpose of preventing any combustion going on in actual contact with the tubes of the boiler, and for the purpose of reverberating and thereby equalizing the heat, before it reaches the tubes of the boiler.

## Sewing Machines.

T. J. W. Robertson, New-York, in his recent patent, claims the forming a seam by passing a loop of thread through the fabric to be sewed; then passing through the fabric and through the first loop, a loop taken from another thread, from the same side of the material as the previous loop; then passing through the fabric another loop from the first thread, through its own first loop and the loop of the second thread; thus making a line of stitching which he calls "double back stitching." Also a new arrangement and combination of the needles, described.

## Cultivator Teeth.

Chas. H. Sayre, Utica, N. Y., has patented a method of securing cultivator teeth, formed of sheet metal, to the frame, by means of a head or cap piece.

## A New Basket.

Made entirely of upright splints or staves, one length of an inch thick, without braids or cross bands, but held firmly between two pieces of thin board forming the bottom and two hoops which form the rim, which are fastened together by wrought nails. The bottom pieces are so placed that the grain runs in different directions. A wire hoop also passes round the middle of the basket. The cost is about the same as that of an ordinary basket. It was patented in April last, by Mr. Ellis, of Springfield, Vt.

## Natural Engraving.

A NEW and beautiful process for securing "fac simile" impressions of leaves, plants, etc., was described at a recent meeting of savans in Boston.

Mr. F. H. Storer exhibited some proof-sheets of a work upon the Plants of Austria by Ettingshausen and Pokorny, recently published at the Imperial Printing Office in Vienna. The impressions, from which these prints were struck off, are obtained by the process known as "Natures own engraving," in which the dried plant to be copied is placed between a sheet of steel and another of very pure soft lead, and altogether subjected to great pressure by passage between rollers. An impression of the plant, even in microscopic details of the most delicate Algæ, is thus transferred to the soft lead—the plant being forced into it—from which any number of copies may be taken by electrotyping.

Examples of the application of this process in the delineation of other objects, such as small animals, agates, fossil impressions, sections of wood, lace, etc., were also exhibited.

## Water Proof Soles and Heels.

MR. GODFREY, of Milford, Mass., has recently taken out a patent for a cast heel of India rubber with an entire sole of rolled or sheet rubber, which he claims to be an improvement in the manufacture of India rubber shoes. This may be an important improvement. Why will not somebody contrive to make such soles and heels to leather shoes and boots? This would prove, in our opinion, of great value.

## A New Fire Ladder.

A VALUABLE ladder has been devised by some one in Ohio. It is spoken of in the Cincinnati *Gazette*. Turning a crank extends the reach of the ladder from a very few feet to seventy-five feet. When its length is sufficient for the use required of it, it is hooked upon the roof or other convenient place. At the upper end is a pulley over which a rope is drawn, with a basket attached, into which persons or valuables may be placed and safely removed. The bottom rests upon a carriage, for the sake of rapid transportation.

## Polishing Plate Glass.

A NEW process for polishing plate glass has been described in some of our exchanges, which, if successful, will greatly reduce the price of large mirrors. The plates are placed between two disks, turned by steam. It requires two and a half hours to grind down the plates, and one hour to polish it. By this process, the large mirror in the drinking saloon of the St. Nicholas, which cost $1200, or $16 75 per square foot, can be made and polished for 40 cents a foot, and silvered for 30 cents, making a cost of only $56. Everybody then can have a large mirror, but then they would cease to be fashionable.

## Manufacture of Gas.

THE process of making coal gas is much simpler than persons imagine. Bituminous coal is thrown into a hot cylinder of iron, the mouth of which is closed carefully by an iron door with the edges cemented with soft clay. The vapor arising from the coal is received into a tube, by means of which it is permitted to escape into a series of vessels, where it is cooled and deposits much of its impure matter. It is then poured into another series of vessels, containing quick lime, which robs it of its sulphurous and other intermixtures. From this receiver it flows purified into the gasometer, and is from thence distributed, as may be needed, through mains and service pipes. The highly-charged bituminous coals are found best adapted to the purpose of gas making. In the manufacture of gas from Newcastle coal, a chaldron weighing 24 cwt. is found to yield 8,650 cubic feet of gas, 14 cwt. of coke, 12½ gallons of ammoniacal liquor, and 12 gallons of thick tar. Cannel coal will yield on an average 16,000 feet to the chaldron.

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## Sewing Machines.

WE find the following lively paragraphs in the *Home Journal*, a paper which, by the way, we regard as one of the very brightest gems of the first water, among all the brilliants which issue from the weekly press of this country.

TAKING THE WO FROM WOMAN.—Like all families residing in the country, we have been obliged to make a very considerable event of "the year's sewing"—the sending to the city for sempstresses, who, for weeks together, came and applied the indefatigable needle—an amount of confining and unintellectual toil which has always seemed to us to call for the liveliest sympathy with those who were compelled to follow it for a subsistence. "The Song of the Shirt" and the Medical Essays which appear from time to time deprecating the disastrous effects upon health, and particularly upon the mind, of employment so monotonous and sedentary, have helped to fix the attention of human charity upon this—woman's slavery to the needle. The first announcement of the discovery of "a machine that could sew," was simply, therefore, "too good news to be true." It was received with a smile and an incredulous shake of the head—as if, *were it true*, the millennium were almost here, or that part at least of the curse of "the sweat of the brow," which bore hardest on woman, were removed or suspended.

Of the household in which we at present write, a most sensible person, of middle age, is the time honored and attached housekeeper. For some years of the earlier part of her life this excellent woman was a professed sempstress; and her skill and experience in all the mysteries of the needle, particularly fitted her for an examination into the merits of the new invention; while her sound common-sense could be fully trusted for an opinion as to its effects on the destiny of her sex. A few weeks ago, she was sent to the city with this mission—to look into the operation of the several patents, see what could be achieved by them severally, and select one for our use. And it is this skilful and unprejudiced judgment which we wish to record, for the benefit of those of our country readers who are in want of precisely such guidance and counsel.

With the general success of the invention—the efficiency of the sewing machine as a new discovery—Mrs. J. was, (to her own great surprise,) immediately satisfied. A machine, in the hands of one woman of ordinary intelligence, will, she thinks, do the work of seven. Its beautiful operation and expedition, also, take off much of the monotony of needle-work; and even to those who would still follow the vocation of sempstress, the possession of one of these marvellous facilitators would be a very great blessing and assistance—there being no probability that the lessening of the price for work will be at all in proportion to the increase of quantity which can be now done by a single person.

After a careful examination of the different inventions patented and on exhibition, her preference was for that of Grover & Baker. The use of this machine, in the first place, she thinks, is easier learned. Then the stitch is more elastic and much stronger for woolen cloths. It finishes off its own work, which the others do not. The work can be ripped and re-sewed, and does not rip, of itself, without its being intended, though every third stitch be cut. The same machine runs silk, linen thread, and common spool cotton, with equal facility; and a very material advantage is that it sews from ordinary spools, not making it necessary, as in the other machines, that the cotton should first be re-spooled. In her opinion, it would be both easier worked than either of the others, and likelier to be kept in repair. Its construction is simpler and stronger. While its cost is no more, she thinks a Grover & Baker is, in most respects, superior to the other machines, and particularly for remote use in the country.—N. P. Willis, *in Home Journal.*

## Manufacture of Carpets.

The New-York *Journal of Commerce* thus describes the process of manufacturing Brussels Tapestry and Velvet carpets, by the New-England Worsted Co:

The process of making these carpets is one of the most interesting in the whole range of manufacturing. The goods are not printed in the piece, but the threads are colored by the printing process before the fabric is woven. The operation is as follows. The yarn in a white state is reeled upon a large drum, so that the threads lie side by side, the circumference of the drum being the length of the figure, or of the yarn necessary to make it, in an elongated state, while enough yarn is placed upon it to make eight threads, each running the whole length of a piece of carpet. A plan for the figure is then drawn, and gaged with mathematical accuracy, showing the exact space of each color to be printed on each separate thread of warp. Holding this plan before her, the girl in charge, by the assistance of a boy, rolls a box of color under the drum, making a line across the drum; if a wider space of the same color is needed this box rolls several times, the drum meantime slowly revolving. The next color is then added and so on, until the whole surface of the yarn upon the drum is straped with these lines. The yarn is then removed, and makes eight threads, only one of which can be used in a single piece of carpet; they are, in fact, eight first threads for as many pieces of carpet. Yarn or the next thread is then wound on the drum, and printed according to its plan, and this is continued until enough is done for the whole width of carpet, the result being enough for eight pieces of carpet just alike. The separate threads numbered are then brought together in proper order side by side, and placed in the loom, the filling, as all our readers know, being of hard twisted uncolored thread which only shows on the back of the carpet. The carpet is then woven, without farther regard to style, the beautiful figures resulting being produced entirely by the previous printing, the mathematical accuracy of which is truly astonishing. The most exquisite shadings, bouquets, and figures of every imaginable design or colorings, may thus be produced with all the accuracy of needlework upon prepared canvas, and at a price which is wonderfully cheap when the brilliancy of effect is considered. The loop on the surface of the Brussels is made by throwing the thread over a polished wire, which is withdrawn as the work progresses; and the velvet surface is made by cutting the loop after weaving.

## Nautical Invention.

The Washington papers give an account of the exhibition of a canvas boat, recently patented by an officer of the army, Col. R. C. Buchanan. The *Intelligencer* says of it:

When the singular craft was first presented to our view it had the appearance of a huge canvas bag inflated; on being opened, the only things it contained were a jointed frame work, a few pieces of thin board, and an additional piece of canvas. In less than fifteen minutes, these things being properly put together, we saw a safe and convenient little boat afloat upon the river, in which some half dozen gentlemen crossed and re-crossed the Potomac. The canvas boats invented and employed by Col. Buchanan have been made of various dimensions; but it is said that a specimen eighteen feet long, eight feet wide and eighteen inches deep, can convey with safety over a rapid river no less than thirty men, with all their arms and equipage; and the total weight of a boat of this size is not greater than can be carried over plains or mountains upon the backs of two mules. Officers of high rank in the army have pronounced this invention one of great importance as a military ponton, while men of experience in the navy have expressed the opinion that it might be employed with advantage as a kind of life-boat at sea.

## Heating Power of Coal.

In a paper read by Mr. Waller, of Lincoln, England, before the Institution of Mechanical Engineers, a series of experiments, with a view to ascertaining the heating power of coal, were referred to as having been made by the aid of a simple and effective instrument, invented by Mr. Jonathan Wilkinson, of Grimesthorp, near Sheffield. The results obtained from the several descriptions of fuel experimented upon are subjoined; the figures showing the number of lbs. of water evaporated by 1 lb. of fuel:

| | |
|---|---|
| Charcoal for foundry blacking | 12.20 |
| Charcoal, Oak | 12.25 |
| Charcoal prepared for electric light, very pure | 12.50 |
| Anthracite coal | 13.00 |
| Anthracite coal, average of two samples | 13.10 |
| Hard Yorkshire coal—Woodhouse | 13.75 |
| Wallsend coal—Yorkshire | 14.85 |
| South Yorkshire coal—average of seven samples | 15.00 |
| Welsh coal | 15.12 |
| Silkstone coal—Yorkshire | 15.20 |
| Gas coal near Chesterfield—first sample | 15.50 |
| Gas coal near Chesterfield—second sample | 16.00 |

From these results it appears that the evaporating power of coal does not depend so much upon its containing a large proportion of carbon, as in the case of charcoal and Welsh coal, as upon the gaseous quality of the coal. In one case, with two qualities of Yorkshire coal, a 30 grain experiment made with this apparatus was fully confirmed by a 5 ton experiment with a steam-boiler; but in another instance the results did not agree, as a different sort of coal requires a different description of furnace, the coals composed almost entirely of carbon requiring less air for combustion than the gaseous coals, and consequently requiring a smaller furnace and smaller flues. The result obtained from coke, which is composed almost entirely of carbon, is low with the apparatus; whereas with a strong draught and proper furnace it would be high.

## The Grade and Horizontal Level.

As the citizens of all this region are abundantly aware, the greatest difficulty with which our farmers and planters have to contend is the constant "washing" to which their lands are subject from the moment they are put in cultivation. Scarcely a plantation in Hinds county, probably, is entirely exempt from this annoying and perplexing fault; and, certainly, we have seen immense fields so completely riddled with "washes" as to be abandoned as utterly worthless. In many instances, even the most careful and scientific management has failed to secure broad acres from this destruction—a destruction not unlike that which awaits the sandbar when its front is presented to the dashing floods of the great Father of Waters.

This natural characteristic of our genial soil is a source of immense injury and serious loss, throughout the upland region of Mississippi, to the State as well as individuals, and numberless have been the experiments, and great the mechanical and scientific research, to discover a practical and certain remedy. We now have the pleasure to announce that an old citizen of Hinds county, Joseph Gray, an eminently practical and clear-headed man, has, after numberless experiments and thorough tests, invented an instrument of the above name, which is pronounced by those whose opinions on such subjects are entitled to the utmost consideration, the very thing which will put it in the power of every man not only to secure his land from the "washing" process, but also place it in such condition as to justify him in applying to it, when it may become somewhat exhausted, any of the fertilizers of the day, with the assurance that they will remain where they are placed, and hence amply repay him for his outlay and labor.

Mr. Gray has already made an application for a patent, and procured a beautiful drawing from Messrs. Munn & Co., of New-York, which can be seen at the Post-office. The instrument may be regarded as one of the most important inventions of the day, and can not fail to be well received by the public, as it has already met the decided approval of many experienced planters, as well as that of civil engineers and scientific men who have critically examined the drawing. —*Hinds County* (*Miss.*) *Gazette.*

## Borden's Concentrated Milk.

The patent for this milk was issued 19th August, 1856. It is prepared at Burrville, Litchfield county, Conn. The works are open for the inspection of all. It is concentrated when *perfectly fresh.* Nothing is added, and no valuable property is removed. The process consists in evaporating in *vacuo* the watery portion of the milk, which is offensive to both taste and smell, owing, as we believe, to original impurities.

When properly sealed it will keep for years; *not sealed*, it remains good upon ice for many days; without ice, unless highly concentrated, it may not continue sweet in hot or damp weather for more than from one to four days, and in that case it should be kept open, in a dry place. In a few days after the milk is concentrated, a granulation of the "sugar of milk" begius to take place. This, however, dissolves in water when prepared for use. The development of the natural sugar in the milk demonstrates that it had undergone no change when concentrated.

It is prepared for use by adding water until the taste is suited. Its richness may be varied indefinitely. Two parts to one will make it equal to cream; six parts to one will give better milk than is generally furnished by milkmen.

The above is what the sellers of this milk, Gail Borden, jr., & Co., say of their article. We have copied it as the shortest way of informing our readers how this milk is condensed for transportation, and then prepared for use. While we were writing another item, our door opened and in came an agent of this company to make us a present—as the farmers and mechanics are often doing, for which all thanks—of a can of the concentrated milk. We open it. It is about as thick as very heavy sugar-house syrup, and of a clear, light yellow. We take our knife, for want of a spoon, and drop a little into a tumbler of water. It sinks to the bottom. Presently it dissolves, diffuses itself through the water, and as rich and luscious a milk as we ever tasted is the result. We take some of it home for tea, and it improves our Oolong. And now what we have to say is this, if that milk is nothing else than fresh cow's milk, condensed, four gallons into one, simply by means of vacuum pans, with no cooking, no foreign mixtures, as the inventor of the process avers, and though he is little known to us, we have the highest testimonials of his integrity, then his discovery is unquestionably valuable; and as the price of this milk is little, if any, higher than that of the blue, watery stuff that kills so many of our city babies, or at best, lets them die for want of nourishment, we think that its coming from the land of wooden nutmegs and white oak cheese, will not prevent our citizens from substituting a better for a worse article. All success to the company, if they will furnish such an article, as they now promise to do, at a price hardly, if at all, higher than for the old distillery slops run through the cow's organism, or what is something better, yes, a great deal better, but not good enough, the country milk churned by a hundred miles of jarring on a railroad.

# Recent Patents,

[ISSUED FROM THE UNITED STATES PATENT OFFICE, FROM OCTOBER 6 TO NOVEMBER 3, 1857.]

## Agricultural.

Machine for cleaning Rice, Wilson Ager, Rohrsburg, Pa.—Churn Dasher, I. N. Buck, Elgin, Ill.—Churn, Moses Bayard, Milan, Ind.—Corn Husker, Robert Bryson, Schenectady, N. Y.—Harvester, Reuben Daniels, Woodstock Vt.—Seed Planter, Joseph Hall, Honeycut, Ala.—Corn Husker, J. B. Heich, Cincinnati, O.—Ditching Machine, Edward and Britain Holmes, Buffalo, N. Y.—Gang Plows, Geo. W. Hildreth, Lockport, N. Y.—Digging Machine, James Mitchell, Osceola, Iowa.—Harvester, N. A. Patterson, Kingston, Tenn.—Cotton Gin Feeder, Jedediah Prescott, Rockford, Ill.—Corn Husker, Geo. K. Brown, Moultonboro', N. H.—Dumping Wagon, Mathias Y. Cope and T. J. Cope, Centerbridge, Pa.—Sowing seed broadcast, Wm. A. Chapin, St. Johnsbury, Vt.—Cotton Cultivator, Daniel P. Forney, Jacksonville, Ala.—Screen for Grain Separators, Abram Gaar, Richmond, Ind.—Steam Plow, John R. Gray, Fair Play, Wis.—Corn Husker, Alden Graham, Roxbury, Mass.—Closing Farm Gate, Thos. B. Hand, Madison, Ind.—Seed Planter, P. Hinkley, Charleston, Ill.—Rake for Harvesters, Samuel Comfort, Jr., Morrisville, Pa.—Endless Aprons of Threshing Machines, Adolph Junge, Belleville, Ill.—Plow, J. S. Lash, Carlisle, Pa —Same, C. M. Magruder, Thomasville, Ga.—Grain Cradle, Daniel Miffleton, King George, Va.—Steam Plow, E. Graves Otis, Yonkers, N. Y.—Swathing apparatus for Harvesters, Samuel C. Longshore, Lanaska, Pa.—Cultivator Teeth, Charles H. Sayre, Utica, N. Y.—Corn Husking Machine, M. M. Stevens and E. G. Kinsley, Stoughton, Mass. Plow, D. K. Thorn, Farmington, Ct. Combining with the ordinary turning plow-scraper, adjustable laterally and perpendicularly.—Cotton Cultivator, R. A. Vick, Byhalia, Miss.—Machine for spading land, Wm. E. Ward, Port Chester, N. Y.—Plow, Noah Warlick, Lafayette, Ala. A double-faced plow stock.—Cotton Seed Planter, T. W. White, Milledgeville, Ga.—Sowing seed broadcast, Jacob Bovers and David S. Greer, Granville, Va.—Seeding Machine, Horace R. Allen, Nelsonville, O.—Brushing Rice, Oliver I. Butts, Georgetown, S. C.—Butter Workers, Ebenezer Butler, Pompey, N. Y.—Fruit Gatherer, Wm. Doty, South Hartford, N. Y.—Severing ears of corn from the stalks, A. J. and J. A. French, Franklin, Vt.—Corn Planter, Hanford Ingraham, Naples, N. Y.—Mowing Machine, Pells Manny, Rockford, Ill.—Cultivator, Thomas A. Robertson, Friendship, Md.—Seed Planter, I. D. Smith, Lancaster, O.—Cotton Scraper, J. E. Winger, Vicksburg, Miss.—Cultivator, Nicholas Whitehall, assignor to himself and A. L. Whitehall, Rob Roy, Ind.—Smut Machine, J. A. Woodward, Burlington, Iowa.—Harvester, Hosea Willard and Robert Ross, Vergennes, Vt.

## Metallurgy.

Saw Filer, A. M. Beardsley, White Pigeon, Mich.—Sash Supporter, Nathaniel E. Baker, Holyoke, Mass.—Ore Separator, Thos. J. Chubb, New-York.—Ore Washer, Joseph Paull, Clifton, Mich.—Saw Filer, Jona Smith, Agawam, Mass. —Cellular iron pavement, S. H. Titus and O. Des Granges, St. Louis, Mo.—Making Hammers, Russel B. Perkins, Meriden, Conn.—Furnace, John Case and Isaac Soules, Amsterdam, N. Y.—Same, John Aldridge, Hudson, N. Y.—Grater, Nathan Ames, Saugus, Mass.—Polishing the heads of trunk nails, Cornelius and Zachariah Walsh, assignors to Cornelius Walsh, Newark, N. J.—Constructing the tires of wagon wheels, John L. Blinn, Austin, Texas.—Bending flanges on boiler heads, David Howell, Louisville, Ky.—Nail Machine, J. S. King, Raynham, Mass.—Chain Machine, Lauriston Toune, Providence, R. I.—Core spindle for casting, D. A. Webster, New-York.—Metalic screw cap for jars, John K. Chace, New-York.—Nut Machine, Richard H. Cole, St. Louis, Mo.—Rotary Shears, Anson Hardy, Boston, Mass.—Grinding and Polishing Machine, Daniel Lovejoy and George F. Butterfield, Lowell Mass.—Making iron spoons, Russel B. Perkins, Meriden, Conn.—Same, G. I. Mix, Wallingford, Conn.—Machine for making bolts, Richard H. Cole, St. Louis, Mo.—Bending metal plates, E. L. Gaylord, Terryville, Conn.—Expanding tires, Samuel Penberthy, Chicago, Ill.—Iron Shutters for doors, etc., M. C. Root, Toledo, O.—Tightning tires on carriage wheels, N. J. Skaggs, Talladega, Ala.—Fastening for metallic bands for cotton bales, etc., Wm. Minor, Houma, La.

MANUFACTURE OF FIBROUS AND TEXTILE SUBSTANCES, ETC.

Preparing paper pulp from beet and other refuse, R. H. Collyer, Camden, N. J.—Twine Reel, S. E. Davis, Waterbury, Conn.—String fastening for sacks, etc., James A. Watrous, Green Spring, O.—Carding Machine, Joseph Davis, East Wilton, N. H., assignor to himself and Royal Southwick, Lowell, Mass.—Manufacture of cotton yarns, S. C. Lester, Bradford, and J. Warburton, Addingham, England.—Sewing Machine, T. J. W. Robertson, New-York.—Cotton Cleaner, Jesse Johnson, Hampstead County, Ark.—Steam cotton press, T. J. de Yampert, Mobile, Ala.—Sewing Machine, S. H. Roper, Roxbury, Mass.—Same, by John W. Marsh, Roxbury, Mass.—Machinery for spinning Flax and Hemp, M. D. Whipple, Charlestown, Mass., assignor to Alfred R. Ely, Newton, Mass.—Machinery for burning wool on the felt, John Waterhouse, Little Falls, N. Y.—Sewing Machine, C. H. Andrus, assignor to Squire Lee, Goshen, N. Y.—Machine for folding paper, Cyrus Chambers, Jr., Philadelphia.

CHEMICAL PROCESSES, ETC.

Process of coating iron, E. G. Pomeroy, Philadelphia.—Lime Kiln, A. G. Anderson, Quincy, Ill.—Amalgamator, J. A. Bertola, assignor to himself and John Stagg, New-York.—Water Cooling Pitcher, Alonzo Hebbard, New-York.

COLORIFICS, ETC.

Preparing fats for candle making, M. W. Brown, Buffalo, N. Y.—Gas Generator, Salmon Skinner, Yonkers, N. Y.—Bakers' Oven, Hiram Berdan, New-York.—Coal Sifter, Samuel Booth, New-York.—Stove and Furnace Grate, Wm. T. Coggeshall, Fall River, Mass.—Air and Vapor Burner, O. F. Morrill, Boston, Mass.—Coal Stove, D. Christian Raub, Davenport, Iowa.—Shade for Lamps, Wm. Kemble, New-York, and Wm. H. C. Bartlett, West Point, N. Y.—Breaking Coal, John R. Deihm and Jasper Snell, Pottsville, Pa.

STEAM AND GAS ENGINES, ETC.

Rotary Exhaust Regular for Locomotives, E. R. Addison, Baltimore, Md.—Water Gage for steam boilers, Edward Whitely, Boston, Mass.—Water Indicator for steam boilers, F. B. Fournier and David Hinman, assignors to themselves and J. Munroe, Berea, O.—Steam Generator, A. B. Latta, Cincinnati, O.—Steam Boiler, Wm. George Norris, Philadelphia.—Steam Pressure Gage, E. G. Allen, Boston, Mass.—Feed water pipe in the bed of a steam engine, Henry W. Bell, Cuyahoga Falls, O.—Vane Governor for steam engines, C. Whittier, Roxbury, Mass.

NAVIGATION AND MARITIME IMPLEMENTS.

Flooding Vessels, John Quigley, Saugerties, N. Y.—Harpoon, James Q. Kelly, Sag Harbor, N. Y.—Unloading Vessels, Robert Ferguson, New-Orleans, La.

MATHEMATICAL, PHILOSOPHICAL, ETC.

Barometer, T. R. Timby, Medina, N. Y.

CIVIL ENGINEERING AND ARCHITECTURE.

Folding Chair for church pews, Moses S. Beach, Brooklyn, N. Y.—Canal Lock Gate, Samuel J. Seely, New-York.—Iron Truss Frames for bridge, etc., Francis C. Lowthrop, Trenton, N. J.—Rotary Excavator, Gilbert H. Moore, Rochester, N. Y.—Rock Drill, G. H. Wood, Green Bay, Wis.

LAND CONVEYANCE, ETC.

Railroad Car Seats, Chas. P. Bailey, Zanesville, O.—Scaling railroad cars, etc., F. W. A. Crause, Baltimore, Md.—Fastening shafts and poles to carriages, Thos. Miller, Worcester township, Pa.—Wagon Brake, Melvil C. Chamberlin, Johnsonburgh, N. Y.—Detaching horses from vehicles, W. D. Mayfield, Bloomington, Ill., assignor to himself and S. D. Porter, Clarksville, Tenn.—Rubbers of railroad car brakes, Henry M. Collier, Binghamton, N. Y.—Carriage Spring, Bold R. Hood, Clinton, N. C. Railway, Sidney A. Beers, Brooklyn, N. Y.—Railroad Car Spring, Henry M. Paine, Worcester, Mass.—Operating railroad brake, Philander Perry, Troy, N. Y.—Railroad chair, John S. Robinson, Levi Herenden, and George Shelden, Canandaigua, N. Y.—Joints of Carriage tops, Reuben W. Stone, Solsville, N. Y.

### Hydraulics, Pneumatics, etc.

Vane for wind wheels, Jesse M. Clock, Atlanticville, N. Y.—Automatic castor and fan, Ellis and Addison H. Nordyke, Richmond, Ind.—Rotary Pump, Henry Pease, Brockport, N. Y.—Water wheel, William Henley, New-Salem, N. C.—Hoisting buckets, George Focht, Reading, Pa.—Water closet, Francis McGhan, Washington, D. C.—Pump, Noah Sutton, New-York.—Hose carriage, John W. Wiler, Stephen B. Sturges, and Gaylord McFall, Mansfield, O.

### Grinding Mills and Mill Gearing, etc.

Elastic Coupling for mill shafting, etc.—Hominy Machine, Peter Siemers, St. Louis, Mo.

### Lumber, including Machines and Tools, etc.

Machine for bending wood, C. F. Beverly, Lancaster, Pa.—Saw Mill, W. A. Flanders, Troy, N. Y., J. B. Drake, Williamsport, Pa., A. W. Fox, Elmira, N. Y.—Sawing Machine, J. E. Foster, Jersey City.—Wheelwrights' Machine, Chauncey L. Guard, Brownsville, N. Y.—Reciprocating mill saw, Samuel Tarver, Augusta, Ark.—Shingle machine, Simeon Marshall, Philadelphia.—Reversing the chisel in mortising machines, C. B. Rogers, Norwich, Conn.—Same, D. M. Cummings and P. C. Cambridge, Jr., North Enfield, N. H.—Operating scroll saws, John L. Lawton, Baltimore, Md.—Rose for door knobs, Samuel S. Day, New-York.—Chamfering and crozing barrels, James H. Mattison, Scribna, N. Y.—Guiding logs in sawing given curvatures, Thomas Miles, Greenbush, N. Y.

### Stone and Clay Manufactures.

Manufacture of artificial hones, Timothy Deming, East Hartford, Conn.

### Leather, including Tanning, etc.

Lasting Pincers, B. F. Sturtevant, Skowhegan, Me., assignor to Elmer Townsend, Boston, Mass.—Striping leather, Adolph R. E. Falck and Paul Stoeger, Newark, N. J.

### Household Furniture, etc.

Washing machine, Benjamin H. Pearson and Daniel B. Neal, Mt. Gilead, O.—Same, Thomas J. Price, Industry, Ill.—Feather dressing machine, Amon Bailey, East Poultney, Vt.—Curtain fixtures, John M. Currier and James M. Thompson, Holyoke, Mass.—Folding iron bedstead, H. F. Vandenhove, New-York.

### Arts, Polite and Ornamental, etc.

Melodeon, S. A. Jewett, Cleveland, O.—Pianoforte action, George Howe, Roxbury, Mass.—Printing press, John H. Utter, New-York.—Printing machine, Samuel W. Francis, New-York.—Hand printing press, Jedediah Morse, Canton, Mass., assignor to Ruggles Power Printing Press Manufacturing Co., Boston.—Violin attachment, Jackson Gorham, Bairdstown, Ga.—Printing press, George R. Gordon, New-York.—Smoothing iron, James Goodwin, Jr., Cincinnati, O.—Hand printing press, Samuel J. Smith, New-York.—Printing press, Merwin Davis, New-York, assignor to P. G. Bergen, Brookyn, N. Y.

### Fire Arms.

Hair triggers for fire arms, P. F. Charpie, Mt. Vernon, O.—Lock for fire arms, Michael Tromley, Mt. Vernon, Ill.—Bomb shell, Samuel Driver, assignor to himself, Isaac V. Culin, and Joel B. Sutherland, Philadelphia.—Breach loading fire arms. C. D. Skinner, Haddom, Conn., and Dennis Tryon, Middletown, Conn.—Projectiles for rifled ordnance, James H, Merrill, Baltimore, Md.—Mode of priming repeating fire arms, George R. Crooker, New-York, assignor to George C. Martin, Brooklyn, N. Y.

### Wearing Apparel, etc.

Wristband Fastener, Benjamin F. Grinnell, New-York.

### Miscellaneous.

Machine for separating slate and other foreign substances from coal, Eugene Borda and D. Glover, Woodside, Pa.—Arrangement for self-dumping trucks, Z. Butt, Lincolnton, N. C.—Apparatus for barns, stables, etc., for securing horses and other stock from fire, Joshua E. Hall, Cleveland, O.—Street sweeper, M. W. St. John and Isaac Brown, Leonardsville, N. Y.—Beating off peanuts from their vines, Thomas L. Colville, Wilmington, N. C., and Samuel Shepherd, Nashua, N. H.—Apple slicer, Nathaniel Thomas, East Dixfield, Me.—Cane umbrella, Herman Crosby, Jr., Waterbury, Conn.—Beehive, B. D. Sanders, Hollidays Cove, Va.—Making brushes, L. A. Tripp, New-York, assignor to L. C. Platt, Westchester county, N. Y.—Candy twisting machine, John Gardner, Philadelphia.—Cleaning and polishing coffee, Wm. Newell, Philadelphia.—Mixing and grinding oil paints, William H. Dolson, New-York.

## Bar Iron—Improvement in Manufacture.

Mr. W. Clay, of Liverpoel, has patented some improvements which contemplate the employment of rolling pressure for the conversion of bar-iron of various sectional figures, as plain, straight, square bars, or T, or channel-grooved, or trough iron, into tapering bars, the object being to impart to bars of iron, so made, different strengths or powers of resistance at different points, and thereby to adapt rolled metal to various uses, where greater strengths or rigidity are required at one point than anoiher. It also relates to the adaption of rolling pressure to the formation of bars, with sudden inequalities of depth or thickness forming projections, protuberances, or indentions on or in the bars at different points, according to the particular purpose for which the iron is required. Instead of allowing the top roll to rise gradually in its bearing, (as in his patent of December 16, 1848,) Mr. Clay adjusts the rolls to the work they have to perform, and keeps them to that position until the operation is completed, his object being to produce a class of work the irregularity in the section of which is too great to permit of its being manufactured with facility by the rising-roll process. Thus; for forming a taper on the extremity of bars, suitable for railway "points," he sets the rolls to a distance apart that will correspond with the greatest depth which the formed bar is required to measure, say three inches; and assuming also that the extremity of the bar is to be tapered down to one inch in depth, he provides a plate of iron or steel of a taper form, and of a thickness corresponding exactly with the diminution of thickness required in the end of the bar under operation. This plate he takes, in its cold state, and places over the end of the bar of red hot metal, and then passes the two between the rolls. The taper plate acting as a filling piece, or as an eccentric projection on one of the rolls would act, enables the rolls to put a severer pressure on the bar at the part overlaid by the plate, and thus by simple rolling, in an ordinary rolling mill, a taper bar may be produced.

We do not see why this plan may not be extended with great advantage to almost every variety of form. By providing plates of any conceivable shape, within certain dimensions, that is, to an extent within which the whole can be passed through the rollers, one may obviate the necessity of a subsequent process of forging. The originality of this invention seems to us to be limited to the idea of connecting the principle of the mold, used in cast iron manufactures, to the specific uses here specified in connection with the roller. The type founder and other workers in metals have come so near to this, that we wonder, as we often have done before, why such an application of the principle was not suggested years ago.—P.

# THE FAMILY CIRCLE.

## Scientific.

### Chemistry for the Million.

OXYGEN—CARBON—CARBONIC ACID.

*Oxygen,* we have before said, constitutes about one-fifth of the atmosphere. It is the vital principle of the air, that which stimulates the lungs as we inhale it, and purifies and gives life to the blood, whereas without it the lungs would cease to move, and the blood would become thick and dark colored, and cease to flow.

*Carbon* is known to us in three forms. 1. It is absolutely pure in the *diamond.* 2. Nearly pure in *charcoal.* 3. In plumbago, sometimes, though incorrectly, called black lead, it is also nearly pure; and it exists largely, in some of its compounds, in all vegetable and animal substances; is an important part of our own bodies, and of everything which we use as food or clothing. It is pure, so far as we know, only in the sparkling diamond. In charcoal it is blackened with soot, and in plumbago it is found in combination with other ingredients.

Carbon, in the form of the brilliant diamond, possesses a sort of importance. It gratifies the pride of a few, who delight to shine in what is more costly than others can get. In its more useful forms it is shared by the poor as well as the rich. The prince who can cover himself with diamonds, could not live a month if deprived of carbon in the same forms in which the poor man takes it in his bread and meat.

One of the compounds of carbon—one which should be understood by all; because it concerns the interests, and the health and life of all—is *carbonic acid.* What a name! it may be said. We can not help that. It is an important compound, and all the world have given it that name, and it has no other. But what is carbonic acid? It is a compound of 16 pounds of oxygen to 6 pounds of carbon, thus:

16 OXYGEN, 6 CARBON, 22 CARBONIC ACID.

Perhaps some of our young readers, who are trying to gather a little knowledge of chemistry from us, without enjoying other instruction, will say, "We know about as much of it as we did before." Well, then, it is for such that we write, and not for old chemists, and therefore we will try to make this very plain. Suppose you take six pounds of charcoal, and burn it; nothing but a little ash is left. Where, then, has it gone? Into the air. But did you see it go into the air? No. It stole away imperceptibly to the sight. You may have seen a spark or two rise, and possibly a few particles of soot. But 99–100 of the charcoal has gone invisibly into the air.

Suppose you had inclosed the charcoal in an iron case, excluding the air entirely, would it burn? No. There would be no combustion, be the heat ever so great: for combustion is nothing else than a combination of the burning body with oxygen; and no oxygen could come to the coal if the air was excluded. But if you heat the coal with access of air, then 16 pounds of oxygen combine with 6 pounds of carbon, and form 22 pounds of carbonie acid, which diffuses itself invisibly in the atmosphere. This gas is once and a half as heavy as atmospheric air.

In fermenting cider, wine, or beer, or when the soda and acid, for soda water, are mixed, you see bubbles of air escape. In all these cases it is this same carbonic acid gas that passes off.

So, when a lime-kiln is burned, the same gas, in vast quantities, escapes. Common lime-stone, the shells of fish, and coral, from all which lime is prepared, are a compound of carbonic acid and lime. The carbonic acid is driven off by heat, and rises into the air.

Burning bodies of every kind, whether consumed for fuel or lights, or by accidental fires, and all decaying vegetable matters, if accessible to air, throw into the atmosphere a great deal of this gas.

Volcanoes also throw it out in large quantities, and in some places it flows plentifully from caverns and fissures of the earth.

In the lungs of men and of all animals it is formed by a union of the oxygen they inhale with the carbon of the blood, and is exhaled into the air. From these and other sources the whole volume of atmosphere is kept supplied with this gas.

In an average condition of the atmosphere, it contains just about one part in twenty-five hundred (1–2500) of carbonic acid. With this proportion the air is not unhealthy for respiration, and it is rich enough in carbon to produce a heavy vegetable growth, if other requisites are present in the air and soil.

With a larger proportion the air would be unhealthy to breathe. In very large proportions, as sometimes happens in dry wells, and in sleeping rooms heated with charcoal, having no open chimney to take the gas off, it destroys life.

In the burning of lime-kilns, it has been known to destroy the lives of whole families sleeping in houses towards which the wind was blowing from the kiln.

And beyond question it shortens thousands of lives by being inhaled in closely packed and ill ventilated rooms. Taken into the stomach, as in soda-water, it is not hurtful; but injurious if inhaled in much more than its ordinary proportion, 1–2500 of the air.

How to escape its injurious effects; its offices in covering the earth with verdure, and its vast importance to agriculture, will be considered hereafter.

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## METEOROLOGICAL.

### CHAPMAN'S PRECALCULATIONS FOR ELEMENTARY CHANGES.

SIMULTANEOUS WITH THE "MONTHLY RAINBOW AND METEOROLOGIST,"

**PHILADELPHIA, PENN.**

BY SPECIAL ARRANGEMENT WITH THE AUTHOR.



### FIRST DEPARTMENT.

EXPLANATORY.

VISION (*instead of being a faculty possessed and exerted at will on distant objects*) is simply a sense of feeling excited on the nerves of the eye by currents of electricity, radiated or reflected *from the object seen.* Hence, light is identical with *electricity,* which, hence, instead of being confined to *our earth,* is the common property of the *solar system.*

The angles of incidence and reflection are *Positive* and *Negative* angles, inducing (with other causes) a successive series of *positive and negative conditions* of the atmosphere and elements.

THE TERM POSITIVE is here given to conditions abounding *more* with *vital electricity,* inspiring *mor* health, vigor, cheerfulness, and *better* feelings for business intercourse, etc., and consequently, *greater success, enjoyment, etc.*

THE TERM NEGATIVE is given to those conditions which *abound less* with electricity, and consequently *are more unfavorable* to health, feelings, business, social intercourse, etc.

¶ Indicates Sundays.

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TWELFTH MONTH, (December.)

*Tendency.* *Time o'clock.*

1st, Positive, from 1 to 5 morn.
Negative, from 5 morn to 10 eve.
2d, Positive, from 3 morn to 9 eve.
3d, Negative, from 3 morn to 7 eve.
4th, Positive, from 1 to 11 morn.
Negative, from 11 morn to 1 eve.
Positive, from 2 to 11 eve.

5th, Positive, from 3 morn to 3 eve.
Negative, from 4 to 12 eve.
6th, ¶ Positive, from 1 to 9 morn.
Negative, from 9 morn to 12 eve.
7th, Positive, from 1 morn to 10 eve.
8th, Negative, from 1 morn to 1 eve.
Positive, from 2 to 11 eve.
9th, Positive, from 1 morn to 6 eve.
Negative, from 8 to 12 eve.
10th, Negative, from 1 to 7 morn.
Positive, from 8 morn to 12 eve.
11th, Mixed, from 1 morn to 12 eve.
Mixed, from 6 morn to 12 noon.
Positive, from 1 to 12 eve.
13th, ¶ Positive, from 1 to 8 morn.
Negative, from 9 morn to 9 eve.
14th, Negative, from 1 to 8 morn.
Positive, from 8 morn to 12 eve.
15th, Positive, from 7 morn to 3 eve.
Negative, from 4 to 12 eve.
16th, Positive, from 1 morn to 12 eve.
17th, Positive, from 1 to 9 morn.
Mixed, from 10 morn to 12 eve.
18th, Mixed, from 1 to 9 morn.
Negative, from 10 morn to 7 eve.
Mixed, from 7 to 12 eve.
19th, Negative, from 1 morn to 10 eve.
20th, ¶ Positive, from 1 morn to 12 eve.
Positive, from 8 morn to 7 eve.
Negative, from 7 to 12 eve.
22d, Negative, from 1 morn to 6 eve.
Positive, from 7 to 12 eve.
Positive, from 6 morn to 3 eve.
Negative, from 4 to 12 eve.
24th, Negative, from 1 morn to 5 eve.
Positive, from 6 to 12 eve.
25th, Negative, from 5 morn to 12 eve.
26th, Negative, from 1 to 8 morn.
Positive, from 8 morn to 12 eve.
27th, ¶ Positive, from 1 to 11 morn.
Negative, from 11 morn to 3 eve.
Positive, from 5 to 12 eve.
28th, Negative, from 3 morn to 10 eve.
29th, Mixed, from 1 morn to 1 eve.
Negative, from 1 to 4 eve.
Positive, from 5 to 12 eve.
30th, Positive, 1 to 11 morn.
Negative, from 11 morn to 8 eve.
31st, Mixed, from 1 to 10 morn.
Positive, from 10 morn to 12 eve.

## SECOND DEPARTMENT.

THE EXPLANATION of the capital letters after morn, eve, and the commas and apostrophes after the letters, and the hyphens and periods in the place of letters, etc., are given in full below.

The changes are four minutes *earlier* for each degree of longitude (60 miles) west. Difference of latitude in the same meridian is immaterial. The dry conditions are fair, and the damp conditions cloudy or wet, at least *three or four times out of five* in the average. *When fair,* the damp conditions diffuse *a cool, damp* sensation through the atmosphere.

Blanks indicate very weak, or mixed or uncertain conditions.

¶ Indicates Sundays.

### TWELFTH MONTH, (December.)

*Time o'clock. Ray-angle. Tendency.*

1st, At 5 morn, O,, damp.
At 6 morn, Y" warm, dry.
At 12 noon, I' cool.
At 5 eve, B" wind stirring.
At 10 eve, ·
At 3 morn, R' warm, dry.
At 9 eve, .. warm.
At 10 eve, G' warm.
3d, At 2 morn, R,, warm, dry.
At 6 morn, O" damp.
At 9 morn, V' cool.
At 5 eve, ·· windy.
At 10 eve, R, warm.
4th, At 1 morn, G., warm, dry.
At 10 morn, V,, cool, damp.
At 11 morn, B, ——
At 12 noon, Y' warm.
At 1 eve, YI' cool, damp, windy.
At 5 eve, GV' cool, damp.
At 11 eve, BI, cool, windy.
5th, At 3 morn, R" warm, dry.
At 10 morn, O,, ——
At 3 eve, Y,, warm.
At 12 eve, OV' damp, windy.
6th, ¶ At 9 morn, B,, wind stirring.
At 10 morn, G" warm, dry.
At 1 eve, V" cool, damp.
At 2 eve, O, damp.
At 12 eve, I' cool.
7th, At 8 morn, R,, warm dry.
At 5 eve, GB, windy.
At 10 eve, G, warm.
8th, At 1 morn, Y" warm, dry.
At 12 noon, R' warm.
At 1 eve, GV" cool, windy.
At 9 eve, V,, cool, damp.
At 11 eve, G,, ——
At 12 eve, B" windy.
9th, At 1 morn, I,, cool.
At 2 morn, GI,, cool, damp, windy.
At 7 morn, R, warm.
At 4 eve, Y, warm.
At 11 eve, I, cool, damp.
10th, At 1 morn, GO" cool, windy.
At 7 morn, G' warm.
At 8 morn, O- ——
At 6 eve, Y,, warm.
11th, At 8 morn . ——
At 11 morn, I" cool, damp.
At 5 eve, BV, cool, windy.
At 6 eve, ·· warm.
At 9 eve, B,, wind stirring.
11th, At 5 morn, R" warm.
13th, ¶ At 2 morn, YI, cool, damp, windy.
At 9 eve, V" cool.
At 11 eve, I,, cool, damp.
At 10 morn, BR,, windy.

At 2 eve, G- warm, dry.
15th, At 5 morn, R, warm.
At 10 morn, .. windy.
At 3 eve, O,, ——
At 9 eve, . ——
At 11 eve, R' warm.
16th, At 6 morn, Y- warm, dry.
At 4 eve, O, ——
At 9 eve, V, cool.
17th, At 6 morn, R,, warm, dry.
At 9 morn, . ——
At 3 eve, V' cool.
At 5 eve, B- wind stirring.
18th, At 6 morn, O" ——
At 9 morn, . ——
At 7 eve, G' warm, dry.
At 9 eve, V,, cool.
At 10 eve, I" cool.
19th, At 4 eve, R" warm, dry.
At 10 eve, GV' cool, windy.
20th, At 2 morn, G,, warm, dry.
At 7 morn, Y' warm.
At 3 eve, R, warm.
At 7 eve, O,, damp.
At 9 eve, OV, cool, windy.
21st, At 2 morn, G, warm.
At 7 morn, V" cool.
At 2 eve, Y,, warm, dry.
At 7 eve, I, cool.
At 11 eve, end of the zodiacal period, or natural month.
At 12 eve, O' ——
At 12 noon, I' cool.
At 4 eve, V, cool, damp.
At 6 eve, G" warm.
At 11 eve, O, ——
23d, At 2 morn, B,, wind stirring.
At 12 noon, .. windy.
At 1 eve, V,, cool.
At 2 eve, YV, cool, damp, windy.
At 3 eve, I,, cool, damp.
24th, At 1 morn, R" warm, dry.
At 4 eve, V' cool, damp.
25th, At 5 morn, G,, warm, dry.
At 10 morn, BO" cool, windy.
At 12 noon, O" ——
At 1 eve, B" windy.
At 7 eve, I" cool.
26th, At 8 morn, G' warm.
At 9 morn, Y,, warm, dry.
At 11 morn, R- warm.
27th, ¶ At 11 morn, YR,, warm, dry.
At 3 eve, G' warm.
At 7 eve, B,, windy.
At 8 eve, V- cool.
At 10 eve, GI. cool.
28th, At 1 morn, BV,, cool, damp, windy.
At 3 morn, Y, warm.
At 10 morn, BI" cool, damp, windy.
At 5 eve, O" ——
At 9 eve, B' wind stirring.
29th, At 1 morn, I, cool.
At 11 morn, R' warm.
At 1 eve, .. warm.
At 4 eve, G" warm, dry.
At 6 eve, O,, damp.
At 8 eve, I,, cool, damp.
30th, At 11 morn, R,, warm, dry.
At 8 eve, I' cool.
31st, At 7 morn, R,, warm,
At 10 morn, · ——
At 3 eve, GO,, damp, windy.
At 12 eve, .. damp.

### GENERAL REMARKS.

Cool Periods, longer and more prominent, are more liable near the 4th.

Greater tendency to windy, cloudy or stormy periods, or gusts, near the 4th, 6th, 8th or 9th, 14th, 20th, 25th, 28th.

Periods more prominently negative near the 4th, 6th, 8th, 20th, 25th, 28th.

Periods of greater electrical deficiency, 1st to 6th, 15th to 25th.

Natural tendency of the zodiacal period from the 1st to 22d to dry. From the 22d to 31st, the same tendency.

### GENERAL EXPLANATORY REMARKS.

THE FIRST DEPARTMENT giving the positive and negative electrical conditions of the atmosphere, constitutes the chief importance of this document.

These alternating conditions not only affect all the minutia of life, health, and enjoyment among mankind, but also bear universally upon the various animal and insect tribes, and even upon the vegetable world. For electricity is the universal principle of *physical* vitality.

By glancing at the first department *synopsis* the physician can usually judge, whether he will find his patients better or worse. The out-of-door business man may also judge when in a strongly positive day, he may succeed more in all business depending on the will of others, especially of the sensitive, than in often several negative days—*not from luck, chance, or fortune!* but because mankind usually act as they feel.

The synopsis is of universal bearing and application, and of great usefulness to all professions and classes of mankind.

The general tendencies are given, but their effects vary according to mental discipline and constitutional sensitiveness. A robust person may only feel a shade pass over his mind from a condition that would prostrate another by sickness.

THE SECOND DEPARTMENT, or synopsis of changes in the atmospheric temperature is less important, and because not infallible. Yet it is sufficiently correct to be deemed useful by many. The changes usually corresponding to within the hour before or after, three or four times out of five in the average.

In this synopsis the first letter of each colored ray is given, instead of the word in full, after the words, morn, eve.—*They* show the angles of the solar spectrum in which the current of reflected light that produces the condition is intercepted.—*Thus*, R for the red ray, O for the orange, etc.—*Currents* intercepted in the angles of the Y, or R, or G rays tend to a warm and usually fair temperature.—R sometimes showery.—V, or I, to cool and damp—three or four times out of five cloudy or wet.—B, and often V, to electrical, and more or less wind stirring.—O to variable—in most cases cloudy or wet; but when dry, to sultry or exciting.—*Single* letters show single currents.—*Double* letters show combined currents, which usually operate longer and with greater force; often so superceding the effects of passing single currents that the *latter* become only modulations in a long dry or wet, warm or cool period, induced by the former. They can not be calculated so accurately as the single currents, but seldom vary many hours.

*Periods* (.) in the place of letters show currents under investigation—*Double periods* (..) combined currents—*Hyphens* (-) after letters show confluent currents—*Commas* (,) after the letters show positive—*apostrophes* (') negative condition.—See second department.—*They* also show the force of the intercepted current.—*One* comma or apostrophe shows weaker, *two* commas or apostrophes (,, '') stronger currents.

*Many* of the weaker changes are perceptible only by instruments. Those instruments are the Prism, Thermometer, Barometer, Hydrometer, and Electrometer.

*In most cases*, V and I currents induce Eastern winds; O, Western; G, Southern; B, R and Y, variable; but B and R often Northern or West, and Y Eastern.

*Long, pointed clouds* or haze, usually attend V or I currents. R, *cumuli*, or woolpack clouds. Y and G scattering, fleecy clouds—the latter more white.

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FOR THE AMERICAN FARMERS' MAGAZINE.

## THE WEATHER.

APPEARANCE OF BIRDS, FLOWERS, ETC., IN NICHOLS, TIOGA CO., N. Y., IN OCTOBER, 1857.

**By R. Howell.**

| | 6 A.M. | 1 P.M. | 9 P.M. | | | REMARKS. |
|---|---|---|---|---|---|---|
| 1 | 31 | 54 | 47 | South | Cloudy. | Rain commenced at 10, A. M. and continued all day. |
| 2 | 49 | 56 | 48 | " | " | Quite hard rain all day and night before. |
| 3 | 49 | 60 | 52 | S. W. | " | |
| 4 | 50 | 61 | 44 | " | " | |
| 5 | 44 | 62 | 44 | West | " | |
| 6 | 43 | 62 | 52 | North | " | |
| 7 | 45 | 58 | 40 | " | Clear. | |
| 8 | 38 | 64 | 43 | " | " | |
| 9 | 39 | 66 | 47 | " | " | |
| 10 | 49 | 65 | 45 | West | " | Farmers thresh their buckwheat. |
| 11 | 31 | 62 | 40 | South | " | Light frost in the morning. |
| 12 | 51 | 71 | 60 | " | Cloudy. | Forest leaves begin to fall fast. |
| 13 | 54 | 78 | 60 | North | " | Drizling rain commenced at 4 P. M. [P. M. |
| 14 | 56 | 60 | 55 | " | " | Rain all night; drizzling rain in A. M.; hard in |
| 15 | 51 | 54 | 47 | " | " | Hard rain set in 11 A. M. and continued all |
| 16 | 47 | 49 | 43 | " | " | Light squals of rain at intervals. [P. M. |
| 17 | 35 | 54 | 40 | " | Clear. | |
| 18 | 40 | 55 | 41 | " | Cloudy. | [in evening from North. |
| 19 | 49 | 58 | 47 | South | " | Light rain commenced at 4 P. M.; hard rain |
| 20 | 34 | 37 | 32 | West | " | Rain by squalls all night—snow squalls. |
| 21 | 31 | 38 | 34 | North | " | Snow squalls at sunrise; very windy day. |
| 22 | 25 | 49 | 35 | South | " | Froze water in a trough; ice remained all day. |
| 23 | 33 | 48 | 42 | " | " | Light drizzling rain at intervals. |
| 24 | 42 | 54 | 49 | " | " | Light rain in the morning. [rain in evening. |
| 25 | 49 | 58 | 47 | " | " | Light drizzling rain and fog in A. M.; hard |
| 26 | 43 | 42 | 39 | North | " | Drizzling rain all day—wind very hard. |
| 27 | 35 | 36 | 35 | " | " | Light snow and rain in A. M. |
| 28 | 34 | 39 | 34 | " | " | |
| 29 | 33 | 42 | 36 | " | " | Light mist of rain in morning and afternoon. |
| 30 | 30 | 47 | 36 | S.&N. | " | |
| 31 | 35 | 55 | 36 | " | " | |

# Domestic.

## Cake Recipes, etc.

The following are from the pen of a fair writer in the *Michigan Farmer*, who says she has found them good and hopes others may:

White Cup Cake.—Two cups white sugar, one cup of rich cream, one cup of butter, three eggs, a full teaspoonful of saleratus, four and a half cups of flour, nutmeg.

Sugar Gingerbread.—One teacup of sugar, three eggs, two thirds of a cup of butter, one teacup of thin sour cream, two and a half cups of flour, one teaspoonful of saleratus, one tablespoon of ginger.

Crullers.—One cup of sugar, half a cup of butter two eggs, half a cup of sour milk, half a teaspoonful of saleratus.

Soda Sponge Cake.—Four eggs, one teacup of sugar, one teacup of flour, one teaspoonful of cream of tartar, half a teaspoonful of soda, salt and lemon.

Potato Pancakes.—Boil and mash some potatoes, add a bit of butter, two eggs, pepper and salt, and thin them with milk till they are of the consistency of pancake batter.

## Tomato Champagne.

A Tennessee paper records the manufacture of a novel beverage in the shape of wine expressed from the juice of the tomato. Good judges pronounce it a first rate article. Its ingredients are simply the pure juice of the tomato and sugar, and it much resembles champagne, having a light, transparent color, with a pleasant, palatable flavor.

☞ Bee stings may be easily cured by applying repeatedly a soft paste made of saleratus and water, the potash neutralizing the poison.

☞ Cracks in stoves may be effectually stopped by a paste made of ashes, salt and water. Iron filings and sal-ammoniac make a still harder and firmer cement.

☞ Father Sawyer.—That remarkable man, Father Sawyer, reached his 102d year, Oct. 9th. He is now stopping with his grandson, in Bangor, and though his sight and hearing are somewhat impaired, his mental faculties are bright and strong.

# Children's Page.

Wonder if those little girls, described in our last, accept the portraits, and believe that we know more about them than they know of themselves. Very much suspecting that they do, we now proceed with some of the boys, as promised in our last.

One of them, as we seem to see him from our Sanctum, is growing a very wise boy, rather too wise for his years. In sober truth, he is a *clever* boy, we mean in the English sense—about what we Americans mean by *smart.* By the way, in this country, we are apt, by a slight perversion of language, to call a person *clever*, if he means well, whether he succeeds well in life or not. If he succeeds well we call him *smart.* In England they apply the word *smart* only to a case of pain; as if, on scratching a finger, they should say it smarts. If you should say of a man or a boy he is *smart,* they would hardly know what you meant, and might be looking to see if any of his skin was knocked off, or whether a bee had stung him. And, as to the word *clever,* they say it means a butcher's implement, and implies activity, force, sharpness. They suppose it should be applied to a man who is active, forceful, sharp, one who *cuts* his way in the world. To call an inefficient, dùmpish, drowsy sort of a personage *clever*, as we do, simply because he means well, seems to them queer enough, and they put it down as a Yankeeism. In all this, they are not far from right. But never mind; we are not under the queen; and she will not harm us if we murder her English.

But to return to our boy; he is both *clever* and *smart*, as John Bull and Brother Jonathan will have it. Almost any one would be proud of such a boy. That he will know enough to behave well, and have force enough to do something in life, and be sharp enough to cut his way in the world, there is abundant ground of hope. But whether, he will know enough and have force enough and be sharp enough to govern himself, is another thing, and a very important one in this case, because he seems determined that no one else shall govern him, and there are sad indications that he is going to be ungoverned, as unfortunate a thing as can well happen to a boy of his age.

This boy's parents are very judicious, always kind to their son, inflicting no restraint which they do not think clearly for his good. But this *young American* thinks his mother might have known very well how the world wagged in her time, but that she is a little behind the present age, and that he knows what belongs to these times better than she does, and that it is quite unnecessary for her to be informed how and where he spends his evenings and holidays.

We speak of his mother because we believe that mothers, to an extent not often appreciated, form the tastes, habits and characters of their sons. But this young gentleman—we call him thus because he is a fine fellow, and gives every indication, save the one of which we are speaking, that he will become a first-rate gentleman—is too wise to be directed by his mother. This is a sad mistake, but we hope he will correct it.

If any boy, 12 or 15 years old, reads this, and is conscious that he does not think well of his mother's counsels, and cheerfully comply with them, we want him to think he is the one we have in our eye. He has natural endowments enough to make him ere long a man to be useful, happy and honored. But more is wanted to carry him upward, a shining, honored pathway. If every boy in the land were before us and we could speak to them all at once, we would say, confide in your mother; none is so worthy of your confidence; none will ever love you with so pure an affection; none will be so faithful, or seek your good so earnestly; and if she goes the way of all the earth before you, her memory will be dear to you and free from regrets, in proportion as you have maintained towards her a kind, obedient, loving spirit.

Will our boy readers think of this? Will they believe us, when we tell them what we know is true, that in about the same proportion as they cherish such a spirit, they will be likely to succeed in all the high and noble purposes for life.

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## Reading for the Winter.

"There are hundreds of intelligent families in Bucks county who at present take no county paper, and who, if they ever read one, depend upon borrowing it of some neighbor."

The Bucks county *Intelligencer* utters the above. Now we hardly believe there can be very much ignorance in a county where that paper is published. Such papers as that, one or two in a county, are the greatest educators in the land. We believe the editor is looking out for the people, to see that they have something to read these long evenings that are coming. No doubt he would be glad to furnish them the Bucks county *Intelligencer* at a merely living price. It is so with us. We would be glad to furnish the *Plough, Loom and Anvil* to 50,000 families at a trifle over what it costs us, and a great deal less than it is worth to them. Will our friends take the hint and shove it along, if there are families among them likely to suffer for want of reading these winter evenings, or to be troublesome borrowers?—Ed.

## Book Notices, etc.

The Illustrated Pear Culturist; containing plain, practical directions, for planting, budding, grafting, pruning, training and dwarfing the Pear Tree; also instructions relating to the propagation of new varieties, gathering, preserving and ripening the fruit, together with valuable hints in regard to the locality, soil, and manure, required for, and best arrangement of the trees in an orchard, both on the Pear and Quince stock, and a list of the most valuable varieties for dwarf and standard culture, accurately described and truthfully delineated by numerous colored engravings. By an Amateur. New-York: C. M. Saxton & Co., 140 Fulton street. New-London: Starr & Co., 4 Main street. 1857.

The above title-page faithfully describes the Illustrated Pear Culturist. It is a complete directory in whatever pertains to the cultivation of this delicious fruit, and will be found of the greatest value to the thousands engaging in its culture, but inexperienced, and consequently feeling the want of just such plain, common sense, practical instruction as is here found. The work contains thirty-five engravings, of great merit, beautifully colored, representing the fruit as growing on the tree and in its perfection—enough to make any man's mouth water, if not entirely insensible to the pleasures of *taste*. The mechanical execution is equal to anything we recollect to have seen from the American press. We heartily commend the work to all, but especially to all who are, or would be, cultivators of choice fruits. By the aid of this book, the mechanic with a patch of land, the farmer at his country-seat, and the retired merchant at *his*—all very good *seats* if well filled, and either just about as desirable as the others—can supply their families with delicious pears nearly the whole year, at less than half the expense they are willing to pay for inferior luxuries.

The Farmer's and Planter's Encyclopædia. Compiled by Cuthbert W. Johnston, Esq. Adapted to the United States by Gouverneur Emerson, M.D. Republished in this country by A. O. Moore, agricultural publisher, 140 Fulton street, New-York.

In a former notice we said that Cuthbert W. Johnson is one of the best of English writers on agriculture; that Dr. Emerson has done his part of the work with great ability; and that the publisher puts it before the American public, in the usually elegant and substantial style of that house, at the price of four dollars. We took occasion then to say, and we now repeat, that by an arrangement between ourselves and the publisher, we can forward it to our subscribers, postage prepaid, for that price, if it will accommodate them. It contains about 1200 pages, and is a very elaborate work, combining a vast amount of information on all important subjects pertaining to the interests of the husbandman.

☞ No woman can be a lady who would wound or mortify another. No matter how beautiful, how refined, or how cultivated she may be, she is in reality coarse, and the innate vulgarity of her nature manifests itself here. Uniformly kind, courteous, and polite treatment of all persons, is one mark of a true woman.

☞ The Albany *Knickerbocker* gives the following recipe to destroy flies: "Take a boarding house pie, cut it into thin slices, and lay it where the flies can have full access to it. In less than fifteen minutes, the whole cobodle of them will will be dead with the colic.

## Editor's Table.

Our own Matters.—In a sort of confidential *tête-a-tête* (literally *head to head,* or confab) with our readers, they will not deem us talkative if we tell them, in a sly sort of a way, that we are short of money about this time. They have not sent us much of late. With most of them, we suppose, it is because they had paid up long ago, and that is an unquestionably good reason. With others, we reckon, it is because the times are hard—a pretty good reason also, and one that disarms us of all fault-finding, but does not help us a whit, since the times are a little harder for publishers than for any others. If a boot pinches it is hard to feel good natured, though no one but ourselves may be in fault. But there are other pinches quite as bad to bear as that of a tight fit in the region of the toes, and we only want to say to our paid-up subscribers, that if they will renew pretty promptly for the next volume, on the cash principle, it will help us mightily through these hard times, and we must say to those not paid up, that we suppose the times may be hard with them; that we know it is difficult to transmit in the present deranged state of things, and that we will not take them by the throat, as we ourselves would not like to be garroted, but that if they can help us a little just at this time, we will never forget it of them.

Next of Your Affairs.—Agriculture is the greatest and the best employment for man. He who lives by the plow and draws from the earth food, clothing and wealth for all, and is contented with a remunerating price for the results of his skill and labor, training a family, the while, to virtue and usefulness, amid the ever changing, but always glorious scenes of nature, is nature's nobleman; and if a higher civilization and a purer Christianity shall ever bless mankind, this will be acknowledged by all. The prominent ideas of a patent nobility are, that it owns the soil, enjoys special privileges, and is to be upheld by government, in spite of folly, in spite of prodigality, in spite of itself. American farmers own the soil, bear special burdens, and stand in spite of everything but themselves. All must feed, clothe and perpetuate a patent nobility. American farmers feed all, clothe all, and perpetuate mostly whatever there is of good among us—stand on their own foundation and uphold the republic—a proud position, but one full of responsibility, whose merited honors they can cause to be acknowledged only by aspiring to a high intelligence for themselves and their children, it being as fixed as the decrees of fate, that every calling, whatever its intrinsic merit, will be, in the esteem of mankind, about according to the enterprise and intelligence of those who practice it. Lay in, then, as the winter with long evenings approaches, the best of reading for yourselves and families. If lectures can be obtained for the gratification of the young people, see that you do not undervalue them. You might prefer a warm fire-side and a book or a friend for a winter evening's enjoyment, but the young have special tastes, and they should be gratified in all ways consonent with your means and their happiness. The young in our farm-houses should have their social enjoyments, their innocent pleasures, and their means of improvement. Let none of them, as they look back from any future point of being, have occasion to regret, but rather to rejoice, that they were born on a farm. The farm is not alone for raising the inferior animals, but is the best place in the world for raising men and women.

A Short Trip.—Since our last we have been out the length of Long Island. It has King's county, of Brooklyn, and four or five smaller towns on the west; Queen's county, some ten times as large, next, and Suffolk county, east of Queen's, extending to Montauk Point, nearly a hundred miles in length. King's and Queen's, being in the vicinity of New-York, are for the most part thickly settled and pretty well cultivated. The same is true of the north and south shores, and the east end of Suffolk county. But in the central region of the island, in Suffolk county, is a region forty miles long, and from four or five to eight or nine miles wide, embracing from 150,000 to 200,000 acres, yet as new as the prairies of Nebraska. The land, as it lies on each side of the L. I. R. R., is nearly nude, the trees having been cut off for wood, time out of mind, as soon as grown large enough to be worth cutting. About the soil there is much dispute, the islanders saying generally that it is worth little or nothing for agricultural purposes, while the holders are asking for it all sorts of prices, from twenty dollars an acre upwards. The soil appears to be of a sandy loam, of one, two, or three feet thickness, lying on a deposit of great depth made up of coarse sand and gravel. Extreme opinions about its value prevail, and such a thing as a medium opinion, or one that we could look upon as reasonable we do not recollect to have heard expressed. Said one man, with whom we were sitting in the cars, whom we took to be a farmer of the island, "You could not afford to farm this land if it were given you." Five minutes after, at a station, we met an old acquaintance, now a farmer in that neighborhood, who told us that all that vast track is worth from thirty to one hundred and thirty dollars an acre; that he was farming a portion of it, and would like to see better crops than he raised, but would have to go far to find them. We asked him, "Is it selling for such prices?" His reply was, "The holders never will sell it for less." We saw that there is a quarrel about it, in which the borders of the island are at war with the center, and that hence the question of the availability of this land for agricultural purposes has become one of all extremes and no means. Further than this the whole thing is a mystery to us. In a few days we hope to visit the region again, and till then we shall very much suspect that this land is neither worth as much as good farms already under cultivation at the same distance from market, nor yet that it is worth absolutely nothing; but that the truth lies somewhere between. All agree that the climate is good, milder both in summer and winter than the mainland. It is from thirty to seventy miles from New-York. A well managed railroad runs through the whole extent. Much of it is well watered, and over nearly the whole tract, the best of water, we understand, can be obtained by digging, in most cases, to no very great depths. If this land can be obtained at a fair outlay, and made productive at a moderate expense, we see not why, on account of its proximity to the city and its excellent railroad privileges, it should not be occupied before another two hundred years of dense settlement and high cultivation all around it.

Hungarian Grass.—From River Head, a flourishing town at the head of Peconic Bay, we brought home a sample of this new grass. It is said that a wandering Pole gave the first seed ever seen in this country to an Iowa farmer, who has since cultivated it, and scattered the seed among his neighbors, till now it has become generally disseminated in that country, and is highly valued, but has yet gone but little beyond. Mr. David Davis, of River Head, received from Wm. D. Wilson, editor of the *Iowa Farmer,* about two spoonfuls of the seed, and sowed three-fourths of it on a plot sixteen feet by ten, or one hundred and sixty square feet. The result was two stout crops, each growth equal to about a pretty good crop of oats, and yielding six or seven quarts of seed. The stalks grow from three to four feet high, and put forth broad leaves to very near the top; heads from three to four inches long, very large and full of seeds, resembling somewhat those of herdsgrass, but larger, and very full of seeds, which are of a dark color, but in size resemble those of red clover. Mr. D. says cattle and horses are exceedingly fond of this grass, whether green or cured into hay; that it requires to be sown each spring, but will produce two crops; and that so far as he can judge from a single experiment in a small way, he believes it will be quite equal the glowing accounts published in Iowa, and may be of great benefit to Long Island farmers.

CHINESE SUGAR CANE.—Mr. Isaac Swasey, of River Head, cultivated half an acre of this plant, made syrup from it, with some difficulty for want of suitable apparatus, but good; thinks nothing could be better, and is convinced that the plant will prove of great value for our country. Of this we can only say that if it has done well in so many cases as are reported from all over the country, in an uncommonly cold, wet summer, may we not hope that it will do still better in more favorable seasons, and that, as we gain more experience in its culture and uses, it may prove increasingly valuable? It is now past a doubt that excellent crystalized sugar has been made from it in the most northern States. This was, perhaps, more by accident than from any definite knowledge of the best process. But if it has been done in a few cases, without experience and without the desired apparatus, does not this encourage the hope, that with these it may be done hereafter with as much certainty as attends other branches of production? And if this is partially hopeful for the north, how much more so for the sunnier south? There is now, certainly, very great encouragement for giving the new sugar cane a thorough trial in every part of the country.

IN THIS LAST NUMBER for the current year and volume we close, as we began, with good wishes for our subscribers, soliciting so many of them as will consent to go with us into another year, to renew their subscriptions in good time, that we may be enabled to serve them and their cause efficiently. Send us some of the needful for these hard times, and, what is more, send us facts, as they occur in your business, that our future pages may be interspersed with matters of practical interest, direct from the farm, the garden, the field, the pasture and the stock yard.

In the multiplicity of writers there is safety. Wholesome discussions will arise; new thoughts will be suggested; and all will be benefitted.

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## Chinese Sugar Cane in the far West.

A WRITER in the Ohio *Cultivator*, writing from Nebraska, says:—"About twenty acres of sugar cane has been raised in this county, and all done well. One gentleman has made three barrels of molasses."

The editor of the Maysville (Cal.) *Herald*, as quoted in the California *Farmer*, in describing a field in his neighborhood, gives the following rather tall story, as we should think, though there is "no telling" what those California valleys will produce:

The average height of the stalks in this field, we should judge to be at the least ten feet—more than two feet higher than the average in the East, so far as we are able to ascertain. Many of the stalks are much higher, and we measured one that was 14 feet 4 inches in length and six inches and-a-half in circumference. This was the highest stalk of fifteen, all of which grew from a single seed. Nine of the stalks were over ten feet heigh, and the average hight of the others was about eight feet. These fifteen stalks weighed fifty pounds, produced ten pounds of the seed, and in the opinion of Mr. Adams, would yield half a gallon of syrup, and leave over thirty pounds of excellent fodder. All this from a single seed no larger than a kernel of buckwheat. What amount of syrup or sugar could be made from the entire crop, with suitable apparatus, we are unable to state with any degree of accuracy, but the amount of fodder from an acre is at least six times as great as Indian corn produces, and cattle prefer it to all other kinds. The sorghum should not be planted in the immediate vicinity of either Indian corn or broom corn, as it readily hybridises.

## Curculio.

Mr. Walker, of Kentucky, through the Ohio *Valley Farmer*, suggests the following remedy: "As soon as the fruit is attacked take a tin-pan, into which soap-suds has been placed to the depth of an inch or two; place it in the tree and place a small glass globe lamp in the middle of the pan, which permit to burn all night. In darting towards the light, the curculios strike the glass, and are precipitated into the liquid, from which they are unable to extricate themselves."

We know nothing of this prescription, further than from the above, but it could be easily tried, and we should think the experiment might be worth making. Remember it till next June and then see for yourself.—Ed.

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## Market Items.

The General Produce Markets, yesterday, opened very heavily for nearly all the leading articles, especially Flour and Wheat, as well as for hog products, all of which decreased in value, without finding more extensive purchasers. Cotton and groceries were rather quiet, though quoted firm. Freights were dull and drooping.—*N. Y. Daily Times, Dec.* 1, 1857.

The sales of cotton yesterday embraced about 600 bales, based upon middling uplands at 11¾c., and good middling do. at 12c. The foreign news by the Fulton and the favorable prospects of re-opening the Erie canal, in whole or in good part, combined to depress the market for flour and wheat.

The market for flour was heavy, and prices declined from 10c. to 15c. per barrel, while sales were moderate and chiefly confined to the local and eastern trade. Wheat was from 3c. to 5c. per bushel lower, and sales light. Corn was scarce and firm at 90c. for Western mixed; sales of Southern white at 92c. to 94c. Pork was heavy and prices tended downward, while sales were moderate.—*New-York Herald, Dec.* 1, 1857.

Provisions.—Pork is heavy and drooping. Sales, 450 barrels, in lots, at $18 for Mess, and $16 to $16 50 for Prime per barrel. Stock of Pork in the packing-yards of New-York and Brooklyn, 4,359 barrels, Dec. 1, 1857; 10,109 barrels, Nov. 1, 1857, and 8,390 barrels, Dec. 1, 1856. Cut Meats are quiet and languid at 9¼c. to 10¼c. for new pickled Hams, and 7½c. to 8c. for Shoulders per lb. Smoked Bacon 12c. per lb. Lard appears heavy and declining. The transactions since our last embrace 250 barrels fair to prime, at 10c. to 10¾c. per lb. Beef is inactive and drooping. The transactions since our last consist of 170 barrels, in lots at $12 to $13 50 for repacked Western Mess; $14 25 to $14 75 for extra do., $9 to $10 50 for country Mess, and $5 75 to $7 for do. Prime per barrel. Prime Mess Beef, $19 to $24 per tierce. Beef Hams, $14 50 to $17 per barrel. Stock of beef in the packing yards, 27,095 tierces and barrels, Dec. 1, 1857; 9,085 tierces and barrels, Nov. 1, 1857, and 10,228 tierces and barrels, Dec. 1, 1856. Butter is in fair command at steady rates, 12c. to 17c. for Ohio; 15c. to 21c. for common to very good State, and 22c. to 25c. for prime to choice do. per lb. Cheese is plenty and saleable, at 6c. to 8½c. for common to prime per lb.—*N. Y. Daily Times, Dec.* 2, 1857.

Bull's Head.—The prospect of supply and price of cattle at Bull's Head to-day, from all that could be learned last evening in Forty-fourth street, was that the number and price would be about the same as last week—that is, 10 cents for good cattle, and 10½ and 11 cents for those of extra quality. The high tariff upon Western cattle over the railroads is cutting off the supply and keeping the price up. It is a questionable policy for railroads to enhance the price of necessaries of life at such a time as this by increasing freight—since it lessens the receipts of the roads, while it increases the cost to all consumers of meat.—*N. Y. Daily Tribune, Dec.* 1, 1857.

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Those of our subscribers who receive bills in their Magazine, and any others who have not sent us all their dues, will confer a special favor by enclosing to us without delay. Bills current with them will be received at par. We trust our friends will favor us by prompt remittances.

# INDEX TO VOLUME X.

**From June, 1857, to December, 1857, inclusive.**